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ABSTRACT

This volume contains a compendium of the work of Rawley Silver. A founding member of the American Art Therapy Association, Silver is both an artist and a researcher; she is the originator of the Silver Drawing Test (SDT). In Part 1, nine studies in the area of "Hearing Impairments and Language Disorders" include three studies on art education for the deaf, three studies related to cognitive skills among deaf and aphasic children; one study on teaching art to deaf students; one study on Imagination, Originality, and Abstract Thinking among deaf children; and "Comparing SDT Scores of Deaf, Hearing, and Learning-Disabled Girls and Boys." Five additional studies are summarized. In Part 2, six studies on "Learning Disorders, Brain Injury, and Mental Illness" are presented. These include "Teaching Handicapped Children," "Art as Language," "Identifying Gifted Handicapped Children through Their Drawings;" two articles on cognitive skills, one on Stimulus Drawing Technique with adult psychiatric patients, stroke patients, and adolescents. Five additional studies are summarized. In Part 3, six studies on "Unimpaired Children and Adults; Age and Gender Differences, Self-Images, and Correlations" investigate subjects such as emotional content, fantasies, and attitudes related to sex differences and self-image in drawings. Six additional studies are summarized. (EMK)

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# Studies in Art Therapy 1962-1998

Rawley A. Silver

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# Studies in Art Therapy 1962-1998

## Access to Fantasies and Cognitive Skills

Rawley A. Silver
Ed.D. ATR-BC, HLM

*Foreword by Christine Turner*

Ablin Press Distributors

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# Contents

Acknowledgements vi
Foreword ix
Preface xi

## Part One: Hearing-Impairments and Language Disorders

1. Potentialities in Art Education for the Deaf 3

   *Eastern Arts Quarterly*, 1962

2. Art for the Deaf Child - its Potentialities 11

   *Volta Review*, 1963

3. Art Education and the Education of Deaf Students, Co-author, John Harrington 19

   *Volta Review*, 1968

4. The Transfer of Cognition and Attitudes of Deaf and Aphasic Children Through Art 25

   State of Illinois Instructional Materials Center, 1972

5. Cognitive Skills Development Through Art Experiences: An Educational Program for Language and Hearing Impaired and Aphasic Children 31

   NY State Department of Education. *ERIC* ED # 064 745, 1973

6. Using Art to Evaluate and Develop Cognitive Skills 37

   *ERIC* ED # 116 401, 1975

7. Objectives and Methods of Teaching Art to Deaf Students 47

   *Viewpoints: Dialogues in Art Education*, Illinois State University, Normal, IL, 1976

8. The Question of Imagination, Originality, and Abstract Thinking by Deaf Children 49

   *American Annals of the Deaf*, 1977

9. Comparing *SDT* Scores of Deaf, Hearing, and Learning-Disabled Girls and Boys 55

   *Silver Drawing Test of Cognition and Emotion*, 1996

**Summaries** 59

The Role of Art in the Cognition, Adjustment, Transfer, and Aptitudes of Deaf Children,
    *Proceedings of the Conference on Art for the Deaf*, 1971
*The Role of Art in the Conceptual Thinking, Adjustment, and Aptitudes of Deaf and Aphasic Children*, Doctoral Project, 1966
*Demonstration Project in Art Education for Deaf and Hard of Hearing Children and Adults*,
    US Office of Education, 1967
*Shout in Silence: Visual Arts and the Deaf*,
    Smithsonian Institution Traveling Exhibition Catalogue, 1976
*Developing Cognitive & Creative Skills through Art*, 1978/1986/1989

## Part Two: Learning Disorders, Brain-Injury, and Mental Illness

10. The Role of Art in Developing and Evaluating Cognitive Skills, 67
Co-author Claire Lavin

*Journal of Learning Disabilities*, 1977

11. Teaching Handicapped Children 77

*Arts and Activities*, 1979

12. *Art as Language* 79

Catalogue, Smithsonian Institution Traveling Exhibition, 1979 -1982

13. *Assessing and Developing Cognitive Skills in Handicapped Children Through Art* 93
Co-authors, Claire Lavin, Eldora Boeve, Karen Hayes, Judith Itzler, Jo-Ann O'Brien,
Phyllis Wohlberg, and Niru Terner

National Institute of Education Project G 79 0081, *ERIC* ED # 209 878, 1980

14. Identifying Gifted Handicapped Children through Their Drawings 97

*ARTherapy, Journal of the American Art Therapy Association*, Vol. 1, No.1, 1983

15. The Stimulus Drawing Technique with Adult Psychiatric Patients, Stroke Patients, and in Adolescent Art Therapy 105
Co-authors Louise Sandburg and Kristen Vilstrup

*ARTherapy, Journal of the American Art Therapy Association*, Vol.1., No.3, 1984

**Summaries** 113

Clues to cognitive functioning in the drawings of stroke patients,
*American Journal of Art Therapy*, 1975
*Stimulus Drawings & Techniques in Therapy, Development & Assessment*,
1981/1986/1989 /1991/1997
*Silver Drawing Test of Cognition & Emotion*, 1983/1990/1996
*Draw a Story, Screening for Depression*, 1988/1993
Using the *Silver Drawing* Test in School and Hospital, Co-author, Felix Carrion,
*American Journal of Art Therapy*, 1991

## Part Three: Unimpaired Children and Adults
## Age and Gender Differences, Self-Images, and Correlations

16. Sex Differences in the Emotional Content of Drawings 117

*ARTherapy, Journal of the American Art Therapy Association*, Vol 4, No. 2, 1987

17. Gender Differences in Drawings, A study of self-images, autonomous subjects, and relationships.

*ARTherapy, Journal of the American Art Therapy Association*, Vol. 9, No. 2, 1992 129

18. Age and Gender Differences Expressed Through Drawings: A study of Attitudes Toward Self and Others 137

*ARTherapy: Journal of the American Art Therapy Association*, Vol. 10, No.3, 1993

19. Identifying and Assessing Self-Images in Drawings by Delinquent Adolescents 147
Co-author:JoAnne Ellison

*The Arts in Psychotherapy*, 1995

20. Sex Differences in the Solitary and Assaultive Fantasies of Delinquent and Nondelinquent Adolescents 161

*Adolescence*, Vol. 31, No. 123, 1996

21. Sex and Age Differences in Attitudes Toward the Opposite Sex 171

*ARTherapy, Journal of the American Art Therapy Association*, Vol. 14, No. 4, 1997

**Summaries** 177

Age and Gender Differences in Fantasies about Solitary Subjects and Relationships,
*Draw aStory*, 1993;
Assessing the Emotional Content of Drawings by Older Adults,
*American Journal of Art Therapy*, 32 (2) 1993
Gender Differences in the Spatial Ablities of Adolescents,
*ARTherapy*, 13 (2), 1996;
Gender Parity and Disparity in Spatial Skills,
*ARTherapy*, 15 (1), 1998;
Age and Sex Differences in Fantasies about Food and Eating,
*Updating the Silver Drawing Test and Daw A Story Manuals*, 1998;
Correlations between *Draw a Story* and the *Silver Drawing Test*,
*Updating the Silver Drawing Test and Draw A Story Manuals*, 1998.

**Publication List** 180

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The studies of reliability and validity could not have been carried out without the help of many art therapists and teachers who volunteered to administer the drawing tasks or score responses, as well as psychologists who performed the statistical analyses. Although a list of their names is too long for inclusion here, their assistance, and my appreciation, has been gratefully acknowledged in the original publications. I welcome this opportunity to say thank you to them again.

I also want to thank the children and adults who came to my classes and created the drawings and stories reprinted here. Although I cannot reveal their names, I am deeply grateful for what they taught me.

For Ed

# Foreword

Writing the foreword to this compendium of Rawley Silver's work is a privilege and a pleasure. In purusing this book, the reader may follow the course of Dr. Silver's remarkable career as an art therapist and researcher. Her published writing spans almost four decades. It reflects Rawley's deep commitment to excellence in process coupled with her undaunted curiosity to learn more about people. Her creative, inquiring attitude toward life has led her to explore ways that art can directly help widely diverse populations. Her careful documentation of this work assists us, as human service providers, to better understand these populations. Rawley Silver's scientific approach to art therapy research contributes to the body of knowledge which helps build credibility for our young profession. Permeating all of her writing is Rawley's sincere respect for people.

Rawley Silver is one of the senior members of the art therapy profession. She was active during the early formative years of the American Art Therapy Association. At one of the first national art therapy conferences, Rawley presented a paper on her foundational work with the deaf. Like the other founders of the professional association, Rawley's belief in the personal benefits offered by "art making" guided her towards providing creative artistic opportunities for children who had not previously enjoyed such experiences. Her first article, "Potentialities in Art Education for the Deaf," was published in 1962. Rawley's work has had a significant influence in helping those who work with the deaf to appreciate the creativity and intelligence present in children who are limited in other ways. She broadened this influence through her organization of two traveling shows of art of deaf children, accompanied by catalogs "Shout in Silence" and "Art as Language." These exhibitions were circulated by the Smithsonian.

Stemming from her early work with the deaf and hearing impaired, Rawley developed the Stimulus Drawing cards which she used in her continuing research with the deaf, and with stroke patients, adult psychiatric patients, and adolescents. Her three books, "Stimulus Drawings and Techniques in Therapy, Development, and Assessment," Developing Cognitive and Creative Skills through Art," and Draw a Story, Screening for Depression and Emotional Needs" are classics in the field.

Rawley continues to update her earlier work based upon the research she conducts and that which is done by other researchers using her tests. As the reader will see, the scope and depth of her work is impressive. Most recently, her keen mind has been exploring gender and age differences. Her intellectual bent is toward the scientific, and the quality of her art therapy research has been recognized by colleagues. She received the research award of the American Art Therapy Association no less than four times! She is the recipient of the highest honor in the profession - that of Honorary Life Membership in the American Art Therapy Association. Throughout her long and productive art therapy career, she has continued to pursue her own development as an artist. Her most recent solo exhibition was in Sarasota, Florida, in 1998.

Her creative approach to life and to her work is teamed with her sharp analytical mind. It is no surprise that she is viewed as an inspiring role model for aspiring and practicing therapists. Consistently, Rawley has genderously shared her research and encouragement with students and colleagues. This has endeared her to countless art therapists. She has touched many lives.

This book, for the first time, makes all of Dr. Silver's publications readily accessible. The data she has accumulated and her theoretical constructs provide a rich resource for minds as fertile as her own, to further explore. The book will prove to be of value to art therapists, special educators and many other human services workers interested in learning more about the link between art experiences, states of improved functioning and well being.

In her professional development, Rawley Silver might have taken many different paths. We in the art therapy community are fortunate that she made the choices she did.

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# Preface

When a friend and colleague suggested that I prepare a collection of my journal articles, I declined. Her suggestion was flattering, however, and I thought I might find out if an article published 36 years ago could be reprinted. When permission from the publisher arrived by fax the next day, I decided to give it a try.

This book is arranged chronologically in three parts. Part One includes studies of children and adults with hearing impairments or language disorders. Part Two includes studies of learning disabilities, brain injury, and mental illness; Part Three, studies of age and gender differences among children and adults with no known disabilities. Names have been changed to protect privacy.

Some postscripts have been added, and paragraphs or illustrations deleted to avoid redundency. Some studies have been omitted or summarized because they were too long, or repetitive, or their publishers wanted payment. A publication list may be found at the end of the book.

My interest in deaf children began in mid-life when I was deafened accidentally. Although most of my hearing returned, being deaf for several months made quite an impression. Painting had been my vocation before the accident. Afterward, it became a consolation, and I began to wonder about others who were hearing-impaired. I visited art classes in several schools for deaf children and adults, and was dismayed. I asked if I might teach as a volunteer in a school that did not have an art teacher. The answer was yes but only if I were in graduate school and engaged in research. I enrolled in Teacher's College, Columbia University, and in 1961, began teaching art in the school.

Since only one of my pupils could lipread and speak, and I knew nothing about manual language, we communicated by gesturing, then sketching. As it turned out, we did not need words. The children were quick to understand and sketch in reply. I received a Master's degree, then a doctorate in Fine Arts and Fine Arts Education, and because I also had training and experience in social work, was accepted for registration as an art therapist when the American Art Therapy Association was formed in 1970.

After working with hearing-impaired children and adults for several years, I began to wonder whether art proceedures that could bypass hearing deficits could also be useful with those who suffered language deficits caused by brain injury, learning disabilities, or the opposite constellation - verbal strengths and visuo-spatial weaknesses. These studies are presented in Part Two.

Finally, it occurred to me that the art procedures might be useful with any child or adult. These drawing tasks call for responses to stimulus drawings, and one, Drawing from Imagination, has provided access to fantasies, self-images, and masked depression. The tasks also have provided information about age and gender differences in attitudes toward self and others, as well as cognitive skills. These studies are presented in Part Three.

# Part One: Hearing Impairments and Language Disorders

# 1. Potentialities in Art Education for the Deaf

*Eastern Arts Quarterly*, Vol. 1, No.2, 1962

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Education of the deaf centers around the acquisition of language, for without language many kinds of thinking are impossible. The deaf child must learn not only that people, things, and activities can be designated by names, but that they can be recalled and discussed when they are not physically present.

Although the deaf have the same variations in intellectual capacity as the hearing, they do not have the same opportunities for mental growth because they are deprived of many experiences. While the hearing child often learns new words unconsciously, the deaf must learn them one by one with intense effort. Many different words have the same meaning, and one word can mean many different things. For the deaf, reading comes last.

The ability to understand and use language varies widely among the deaf and seems to be independent of intelligence. Here, a class of sixteen-year-olds translates Latin. There, a boy of the same age is at the fifth grade level academically, although he has an I.Q. of 157.*

The essential handicap of deafness is not a problem of speech, but the frustration of missing concepts. Since art, as well as language, is a means of communicating concepts, can it do more for the child who is deaf than enrich his school program? Can it serve as an additional avenue of communication? Can it stimulate intellectual growth? Can it ease emotional adjustment?

In search of answers to these questions, an experimental painting class was undertaken at a school for the deaf. Three children with emotional difficulties, selected by the school administration, attended a fifty-minute class once a week for about two months.

Elliot was an attractive ten-year-old boy with an I.Q. of 89, although a psychological report described him as having average or above average intelligence with a high potential, and "multiple emotional problems obscuring diagnosis and/or receptive aphasia." In the third grade he was described as aggressive and having little concept of right and wrong.

Julia was an eleven-year-old girl who gave the impression of being gentle and reserved. Her I.Q. was 121 and she was in the sixth grade. It was reported that she tried to do everything perfectly, was not as popular as she wanted to be, and was sometimes mean to smaller children.

Martin was a well-mannered boy whose appearance suggested that he was about ten. Since records were unavailable, the school accepted a birthdate which gave him an age of fifteen and an I.Q. of 82. However, the report card from his native country indicated that if he was really fifteen he did not start to school until the age of ten. He was in the sixth grade here and had been exposed to English for about one year. A psychological evaluation stated that "his manner of work is unusually slow . . . figure drawings suggest that he is quite anxious behind a facade of social amiability."

Although she was congenitally deaf and her hearing levels were 81 and 82 decibels, Julia lipread and spoke very well. There was almost no verbal communication with Martin and Elliot. Since the school discouraged manual methods and the instructor was ignorant of them, communication was achieved through demonstration and pantomime. Gestures served concrete ideas. Abstract concepts were sometimes communicated by acting out alternatives. Communication was rarely a problem.

---

*The intelligence of deaf children is often established by non-verbal tests such as the Arthur Point Scale.

For the first day, a topic was suggested: to show who lived in their homes with them. The instructor communicated it to Elliot and Martin by making a quick sketch of the members of her own family, and inviting them to do the same. No further suggestions for topics were needed, and during the remaining periods the children depicted their own ideas.

## ART AS COMMUNICATION

There are qualities of experience that cannot be put into words, but can be articulated in art. A captionless cartoon may be eloquent. Even for the hearing in a literate society, verbal language is not enough. We often say what we don't mean, often are unconscious of what we do mean, but reveal to others, nevertheless, without words or in spite of them. Vision is sometimes more reliable than hearing. Children read facial expressions and gestures. They know what their teacher means regardless of what she says. As the hearing child matures, he depends more and more upon the spoken word; but if hearing is lost in later life, he rediscovers how much he can understand through vision alone.

If language is defined as a system of communication through the use of visual symbols, art qualifies as a language. Its conventional symbols are non-verbal and so universal that they transcend languages and cultures. All over the world in children's art, symbols for the sun, trees, animals, flowers, people, windows, are represented in much the same way. Children draw houses with pitched roofs in Afghanistan where the roofs are flat.

The language of art can never take the place of spoken language. Even written language is a poor substitute. But art has always served to communicate ideas and experiences. It is a language where the handicap of deafness is no impediment. If hearing children sometimes find verbal expression inadequate and need to express ideas in visual form, how much more important might art be to children whose speech is restricted, and how useful to their teachers if they could learn more of what their students think and how they feel through what they depict!

The children in this class spontaneously used pictures to tell what they knew:

> Julia's fourth picture was a visual list of outdoor activities —fishing from shore and rowboat, motorboating, waterskiing, swimming, playing ball, jumping rope, bicycling, rollerskating, walking, walking dog, and watching (Fig. 1).
>
> Her fifth picture was a farm scene with grazing cows, farmer, and herself sitting under a tree, reading.
>
> Her sixth picture was a ward with patients in hospital beds eating lunch on trays, and a nurse, Julia, carrying another tray.
>
> Her seventh was an outdoor Christmas scene and her eighth, Christmas indoors with children opening presents under the tree and parents holding hands, watching.

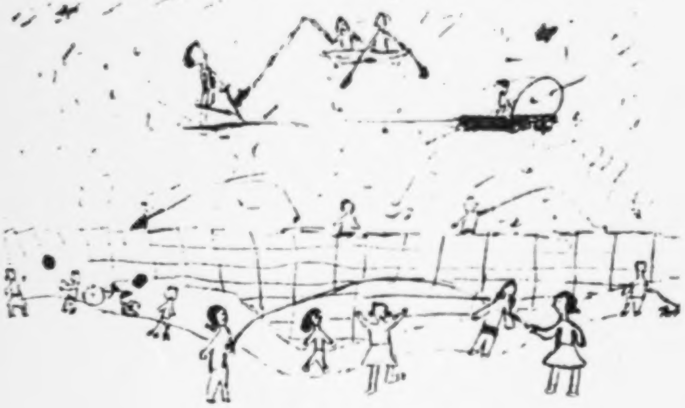
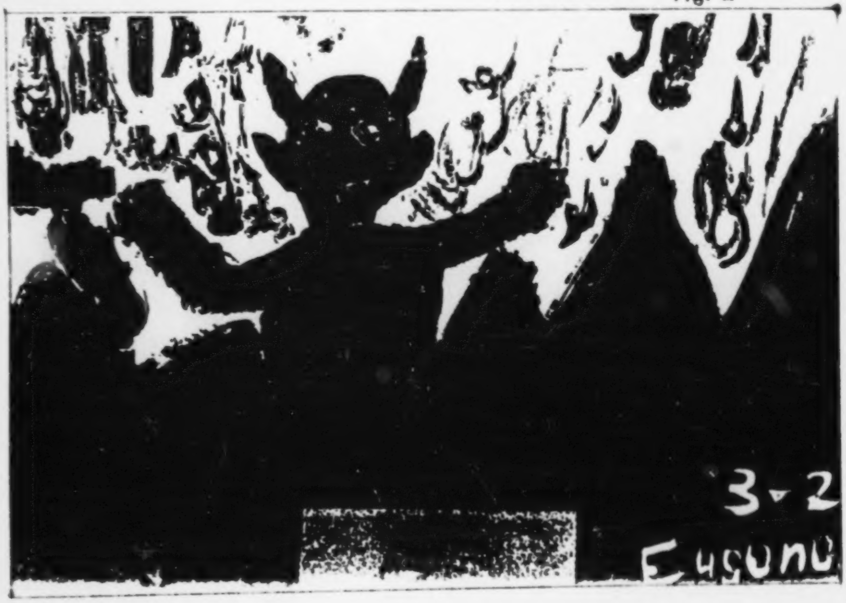


Fig. 1

Elliot's second picture was a boat sailing in choppy water; his third, an explicit devil (Fig. 2); his fourth, a butterfly (Fig. 3); his fifth, horses running in a paddock; his sixth and seventh revealed what he knew and observed at a recent puppet show of Jack and the Beanstalk; his ninth, a worm's-eye view of a city scene with three identifiable breeds of dogs, fire escapes, street lamps, and the varied shapes of the tops of city buildings.

Fig. 2



# ART AND INTELLECTUAL GROWTH

Art activity requires the exercise of many mental processes. It sharpens awareness and reinforces memory. When Elliot painted his picture of Jack and the Beanstalk, he put his recollections into concrete form. He had to review experiences and clarify impressions.

Art stimulates imagination. Young children relate themselves to the world through fantasy, imagining themselves airplanes, cowboys, lions. The young deaf child cannot verbalize imaginary or vicarious experiences, but he can draw them. He can also invent new processes by experimenting with various materials and techniques.

> Martin's fourth picture was the head of a nightmarish creature made with a mixture of paint, crayon, and magic markers (Fig. 5).

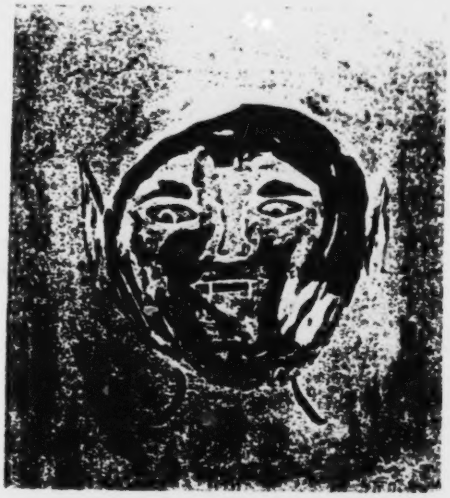


Fig. 5

> Elliot's vivid butterfly was painted immediately after his classmates discovered a small dead moth (Fig. 3).

Art develops reasoning power by requiring organization and the constant exercise of judgment. Evaluation begins with the choice of topic and continues with plans, revisions, and decisions. The art form is a vehicle in which new knowledge can be integrated with what is already known, and perceptions and reactions can be crystallized.

Julia once asked if she might copy a photograph of a group of children singing carols under a lamppost. When she understood that she might use the photograph but not copy it, she had to plan to incorporate it into her own work. The result was a painting of Santa, sleigh, and reindeer in the night sky flying over three houses. In the snow under a street lamp stood her own interpretation of singing children.

Martin's bird picture (Fig. 4) demonstrates organization and the solving of problems. After painting the water from which the bird drinks a blue as deep in tone as the brown of its body, he had walked to the sink to refill his water jar. As he returned, the teacher held up his picture so that he could see it at a distance. He studied it as he slowly approached, and may have noticed that the two colors were almost indistinguishable, because when he returned to the table, he painted white ripples in the water and thus separated the two forms. He did the same when he added wood texture to the fence.

After seeing their pictures at a distance, Elliot added a blue sky above his clouds and Julia decided to texture her hospital floor.

## ART AND EMOTIONAL ADJUSTMENT

The world is different for the deaf child and the world treats him differently. Parents often overprotect or reject. Other children often exclude or ridicule. Other people may think him queer or retarded. With all the frustrations which deafness entails, his emotional well-being is often precarious.

While the revelation of a deaf child's knowledge is important, clues to his feelings are hardly less so. Psychology has established the importance of art experience in mental health and uses it in diagnosis and therapy. Paintings and drawings permit the expression of feelings which cannot be verbalized. They provide a socially acceptable channel through which to express emotions, often revealing moods and areas of anxiety.

Elliot's first picture, of his family, included his mother, sister, brother, and himself. Where his father might have stood beside his mother, there was a picture on the wall. The psychological report in his file stated that his father's whereabouts were unknown, and perhaps this picture disclosed an area of his anxiety.

His second picture revealed what he knew about sailing, but little of how he felt.

His third picture was a kind of explosion—a devil with popping eyes, claws, horns and fangs, painted mostly in red with fiery shapes in the background (Fig. 2). His signature, elaborate in size, color and placement, demanded recognition.

During the first three classes, Martin's pictures were executed very slowly in hesitant lines and pale colors—an unfinished family portrait, an unfinished landscape, and the drawing of the buses in a quadrant of his paper. Each time, he indicated that he planned to continue the following week, but when the time came he decided to start anew.

His fourth picture (Fig. 5) was a dramatic contrast—a hideous face in violent colors with fangs and wild eyes. He worked so quickly that, despite time spent mixing colors, he covered the whole paper in one session.

Julia's pictures did not seem to disclose very much of how she felt except for her second, which consisted of tiny figures marching across the bottom of her paper. She seemed to use her pictures as a substitute for words to tell what she knew rather than how she felt.

Art does more than reveal emotions. The expression of unhealthy feelings sometimes serves to banish them. By providing release from emotional tension, art can be integrating and healing. The deaf child seems required to be even more passive in the classroom than the hearing child and his need for the release of being expressive rather than receptive must be greater.

Every child needs recognition, a sense of accomplishment, a feeling that he has some control over his environment, and these are readily provided by the art experience.

At the beginning of the sixth class, Elliot's room teacher said that his behavior had greatly improved. She attributed this to his new status among his classmates because of art.

The day before the classes began, he had had to remain behind while the others went to the zoo because his behavior was so unpredictable. Now he was in charge of class lines, keeping the other children in order.

The location of his classroom directly across the hall was

> significant. On their way to lunch, his classmates, as they formed a line in the hall, admired his pictures extravagantly and escorted him away. One of his friends had been begging to join the art group and the homeroom teacher gave permission one day. His picture was a step-by-step imitation of Elliot's painting.
>
> Martin's last picture, of the bird, was painted in three sessions, one of which lasted for 90 minutes. He had been so intent on his work that he was given permission to remain until the end of the school day.
>
> Julia asked for a great deal of reassurance at first. Should her picture be large or small? Could she make a Hallowe'en picture? What color should she make the skirt? Each time she was asked what she thought, and each time she had an answer. When she made her final seventh and eighth pictures, however, instead of asking for directions, she drew attention to her own decisions.

It is frequently asserted that the deaf lack imagination. Recently, the pictures of twenty deaf children were analyzed and found "so empty of subject matter, of imagery or narrative . . . little planning, organization or care . . . very little involvement and painstaking interest".* Is the lack inherent in the handicap or could it be that the imaginations of these children had not been stimulated? Perhaps it isn't the lack of potential but the lack of opportunity to develop potential.

Opportunity seems largely dependent upon whether the art teacher is more interested in the child's personal statement or his artistic skill. Directive teaching, whether "modern" or "old-fashioned", subtle or flagrant, inhibits creativity. It motivates the child through approval and generally produces similar works. It also destroys the opportunity of knowing what a child is like. If he draws cramped figures in a small area of his paper, it is a clue to his adjustment. If we correct his composition, we destroy the clue.

The alternative is not anarchy. Freedom is consistent with responsibility, and self-expression is consistent with aesthetic merit. The art class can be guided without being controlled.

To the writer the satisfactions of visual expression seem to be intensified in the deaf, and they seem more eager to seize the opportunity for making images, perhaps because their channels of communication are already constricted and concentrated on the visual. If the deaf cannot know the pleasure of conversation, they also have not been distracted by useless talk. Given encouragement and opportunity, they may have a speech to which the rest of us can listen with our eyes.

---

*Marie T. Lampard, "The Art Work of Deaf Children," *American Annals of the Deaf*, Nov. 1960.

## Postscript

Although this article was published in a journal for art educators, it had been submitted previously to a journal for educators of deaf students. After waiting months for a reply, I asked the editor to return the manuscript, then submitted it to another such journal, *the Volta Review*. This editor rejected it promptly.

After the article was published, it was abstracted in another journal, *Rehabilitation Literature*, then reprinted in a book.[1] Subsequently, I received a letter, asking if I "would be in a position to prepare an article on the same subject specifically for the *Volta Review?"* The article follows.

---

[1] Fusfeld, Irving S., 1967. Ed. *A Handbook of Readings in Education of the Deaf and Postschool Implications*. Chas C. Thomas, Springfield, IL

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## 2. Art for the Deaf Child - It's Potentialities

*The Volta Review*, Vol. 65, No.8, 1963

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**Summary: Historically, art has been a channel of communication for man. Through the medium of art, the deaf child can find a means of expressing and describing his innermost concepts, emotions and experiences, even though the language he has acquired is inadequate for this purpose. To be most meaningful to the deaf pupils, though, the art program should not be directive. Thus, not only will the deaf child learn to express himself: but the experienced teacher will find that art work resulting from this type of program will give clues to some of the children's problems and frustrations.**

Can art education do anything more for the child who is deaf than enrich his school program? Can it stimulate intellectual growth or ease emotional adjustment?

In search of answers to these questions, I taught experimental art classes at the Lexington School for the Deaf, the New York School for the Deaf, and a New York City school for the deaf. The classes were limited to a few students, and lasted from six to nine weeks.

There are misconceptions about art just as there are about the deaf. A deaf child is falsely judged by his verbal output, and an art program is falsely judged by technical skill. Some think art is like any other subject in the curriculum and expect a certain amount of art information to be funneled into each child each year. Others think it is not really learning, but a kind of play, useful only to a talented few, and too specialized to concern the classroom teacher or administrator.

A child cannot learn algebra until he knows arithmetic, but he can draw the human figure without knowing much about anatomy. He can draw it more accurately and more interestingly when he knows various techniques, but logically based sequences of information are not essential. They can even interfere. We prize the primitive painting of Grandma Moses and reject the meaningless proficiency of the merely academic.

"Art is less a body of subject matter than a developmental activity," according to the National Art Education Association.[1] As such, it can do more than develop artistic skills—particularly for exceptional children, and most particularly for the deaf.

### Art and the Intellect

Since many deaf children are retarded in abstract thinking as well as in language,[2] we assume that their minds will grow only as they accumulate words to think with. But is language the *only* way to stimulate thought? Meyerson,[3] Doehring,[4] Myklebust,[5] and Rosenstein[6] have all doubted that language is *invariably* associated with abstraction.

The essence of human intelligence is the ability to use symbols, such as language, according to Ernst Cassirer.[7] Animals can only interpret signs which always refer to something physical and useful, whereas symbols may have no practical value whatever. Language develops as the human mind develops—from concrete to abstract, from sign to symbol. Helen Keller knew the word *water* as a sign—useful for washing or relieving thirst. But on the day when she was presented with the word *water*

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at a time when it was not needed, but was just an intriguing experience suddenly she understood the function of language as a symbol, as an instrument of thought. "Somehow the meaning of language was revealed to me . . . I left the well-house eager to learn. Everything had a name and each name gave birth to a new thought."[8]

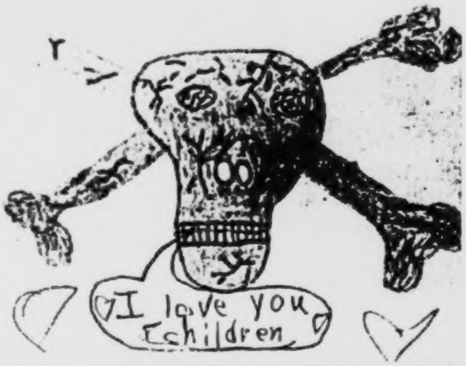
According to Susanne Langer,[9] symbolic thought normally ends in expression. The form of expression which is most important and universal is language. But language is not the only means of articulating thought. Wherever a symbol operates there is meaning. Images, too, have meaning. Depictions, no less than words, are forms of symbolic expression. They are non-verbal symbols. During the Middle Ages art was deliberately created to bring religious concepts to a public which could not read. All over the world in children's art, symbols for the earth and sun, people and animals, trees and flowers are represented in the same way. Deaf children, with very little language, use the same visual symbols to express their ideas.

Even for the hearing in a literate society, language is not enough. There are qualities of experience that cannot be put into words, but can be articulated fluently in art forms. A captionless cartoon may be eloquent. Throughout history, art has served to communicate experiences and ideas, explicitly or implicitly, in form as well as in content. Art meanings are so universal that they transcend languages and cultures. There is meaning for us today in the art forms of ancient Greece, China, Peru, Africa and the South Pacific. Because art has always been used to solve everyday problems of living, as well, we are able to reconstruct the civilization of ancient Egypt from its paintings, sculpture, artifacts and architecture.

The child who is retarded in language and has had little experience with nonverbal symbols could hardly be other than concrete in his thinking. He has had little opportunity to exercise his capacities for abstraction. Art can provide such opportunity.

### Imagination

Young children relate themselves to the world through fantasy. They imagine themselves to be airplanes, lions, cowboys; they animate objects; they invent situations. The deaf child cannot verbalize imaginary or vicarious experiences, but he can draw, paint and model them. He can invent new forms by exploring and experimenting with the possibilities and limitations of wood, fabrics, plastics, metal, and ceramics when he expresses himself through printing, weaving, hammering, painting, modeling and drawing.



*Davis Studio Photo*

***A 12-year-old's painting.***

The skull and crossbones which says, "I love you children," is an example of imaginative expression painted by one of the writer's pupils, a twelve-year-old whose language is very poor. His IQ is 125 on the Wechsler Scale and 104 on the Leiter. (He asked for, and received, help with spelling "children.")

### Association

Just as the writer uses words, the artist uses the plastic elements of form, space, line, texture and color. He relates them to one another by combining and contrasting them. If he represents

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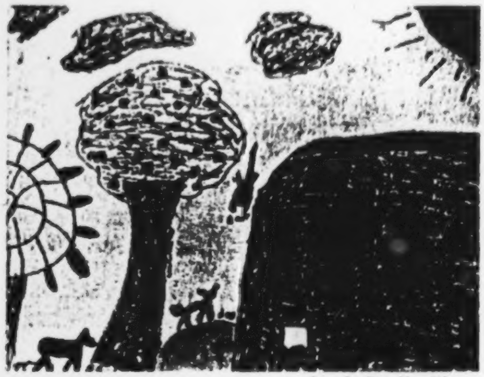
people, objects, or events, he relates them to: (1) one another, (2) the viewer and (3) himself.

A farm scene was painted by another pupil, nine-year-old Joe, whose IQ is 98 (Wechsler) and whose language is below average for a deaf child. The parts of his picture are related to one another as plastic elements and as symbols. The farmer pitches hay; the cow and chickens walk toward the barn; the cat is about to jump on the dog.



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*A farm scene.*

Clearly, Joe had the viewer very much in mind. Not only has he labeled the dog and cat, but to be sure the point would not be missed, when he showed his picture to the class, he acted out the impending fight.

That children empathize with their depictions was often demonstrated by an eleven-year-old girl whose pictures frequently included flying birds. Each time, just before she drew them, she made little flying gestures with her shoulders, elbows and wrists.

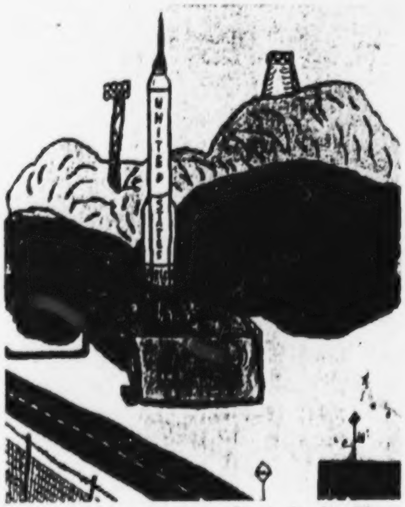
### Memory

In order to make a representative drawing, we must review our experiences and clarify our impressions. Joe had to remember the ways in which a barn looks different from a house, and how many legs a chicken has.

Passive knowledge (or ignorance) becomes active when it is put into concrete form. Many mistakes are self-correcting; they make us stop, think, remember and revise. Apparently Joe saw nothing wrong with his four-legged chickens. If this had been a significant mistake—if, for instance, his class had just studied them then his picture would have enabled his teacher to find out what he had learned and what he had missed. It should be clear, however, that making a spontaneous drawing is very different from taking a test. By turning the art experience into a test, the teacher would soon learn that she had destroyed the art experience.

Like words, visual symbols are forms for preserving ideas that might otherwise vanish. For the child severely retarded in language, his pictures might be, not only a crucial means of holding on to what he knows, but also his only means of showing this knowledge to others.

The blast-off painting was made by Ralph, a sixteen-year-old whose language skills were very poor. His academic level was around the fifth grade but his IQ (Arthur Point Scale) was 157. This painting, and a subsequent



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*The blast-off.*

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one, revealed unexpected knowledge and an intense interest. Language built on these might bridge the chasm between his performance and his potential capacity. By chance, his classroom teacher came in while he was painting in the fence. She discovered that he did not know the word for barbed wire, and proceeded to teach it to him. If the art teacher had assigned topics, Ralph's knowledge and interest might not have shown themselves.

### Perception

Using art forms intensifies awareness. We become sensitive to design, color and texture in our environment. We can choose the clothes which are becoming, the rug which enhances the sofa, the appliance which stays attractive. Enjoyment is widened. We find new pleasure in the shape of a tree or sculpture. Knowledge is increased by experimenting with tools, materials and processes.[10]

For children whose experiences are restricted by disability, the arts can be a major source of interest and pleasure throughout life. Deaf children seem to observe more sharply than the hearing. This writer has never had to demonstrate the same procedure twice in a class for the deaf. Many may have talent, for in the visual arts, at least, deafness is no impediment.

We tend to distinguish work from play according to the amount of pleasure the activity provides, as though the worst-tasting medicine must be best. But don't children learn through play?

When the visual arts program was under consideration for science and engineering students at M.I.T., the report observed:

> "It may well be that one of the important contributions which a visual arts program can make to modern education is to reverse the usual learning process so that, by sharpening the senses, enjoyment will lead to knowing, as well as knowing to enjoyment."[11]

### Organization

Making an art form requires the constant exercise of judgment. It begins when the child selects his subject. He chooses materials and processes to embody his idea. He plans, arranges the parts, rearranges, revises, and finally decides that his work is finished. Every art problem is unique and requires its own solution.

Of course, none of this takes place if the teacher assigns the topic, selects the materials, directs the organization or solves the problems.

A free atmosphere does not mean anarchy. Students can be taught without being dominated. Freedom is consistent with responsibility. Self-expression is consistent with self-discipline and the rights of others. A skillful teacher influences rather than interferes, guides rather than directs.

Directive teaching, whether subtle or flagrant, inhibits creativity. It motivates students through teacher approval. Their work tends to look alike. Copying discourages thinking. If the model happens to be the teacher's, even if it is an abstraction, it is directive teaching just the same. Its resemblance to art experience is as superficially modern as a picture window without a view.

Freedom is not the final goal, but it is what makes education possible, according to Martin Buber. It is the presupposition, the first half of education. "Without it nothing succeeds, but neither does anything succeed by means of it: it is the run before the jump, the tuning of the violin."[12]

### Art and Emotion

Inner equilibrium is as important as intellectual achievement. With all the frustration which deafness entails, the emotional well-being of the deaf child is often precarious and can well be bolstered. Art provides unique opportunities for emotional adjustment.

Art forms reveal feelings which cannot be verbalized, even for those whose

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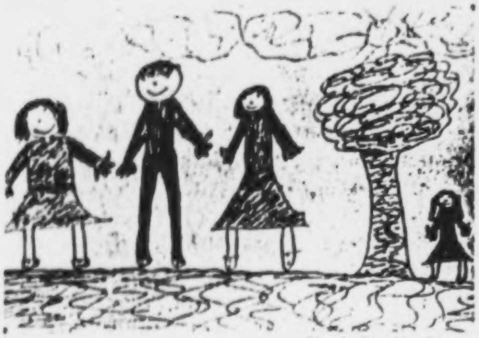

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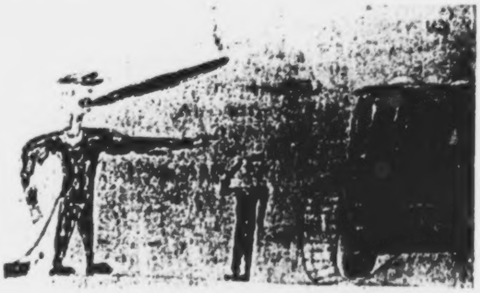
*A family portrait.*

language is unrestricted. They disclose areas of anxiety, for example. The family portrait was made by another pupil in the experimental class, a fourteen-year-old girl who is of about average adult height. In her picture, however, she is the little one on the end, separated from her sister and parents by a tree. Two of her other pictures have essentially the same composition—an isolated figure on the extreme right. In one, the figure is herself. On the other side of the tree is a house in the distance, an expanse of water, and flowers, grass, and a dog in the foreground. In the other picture, which she titled, "A girl or boy in the Spring?", the large area is occupied by a girl and large flowers. On the other side of the tree, his arms outstretched toward her, is the boy. He says, "Jean: where Jean? very sad."

Art provides an environment which the child can control. It lets the exceptional child realize his power and freedom. The artist is the initiator and chief controlling factor in what he does. In art experience, the child can be the single, all-powerful master of his materials, tools and the forms he creates.

Art provides a socially acceptable outlet for unacceptable feelings. The expression of unhealthy feelings sometimes seems to banish them. Several children taught by the writer seemed to use the same expressive pattern. At first their work was impersonal, slow, timid, stereotyped, imitative. Then came a picture which was violent either in meaning, or both form and meaning. After that, their work was imaginative and expressive but not, apparently, angry. In his third class, a ten-year-old painted a devil with popping eyes, claws, horns and fangs, using mostly reds and blacks. Another boy, slightly older, who had been too slow to finish timid drawings during the first three classes, completely covered an 18" by 24" sheet of paper with paint in fifty minutes during his fourth class. His subject was a hideous face with wild eyes and fangs; his colors were strong and harsh.[13]



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*Imaginative drawing by a 17-year-old boy.*

Another drawing was one of two aggressive pictures made by a seventeen-year-old boy in his sixth experimental art class. Until then, his work was unemotional and imitative. In the picture the bullying officer, with a tremendous cigar in his teeth, doesn't know that a charge of dynamite has been fastened to his belt, and the fuse lit. The little soldier who salutes looks scared, but the one in the tank is laughing behind his hand. The boy's second picture shows a happy bandit about to rob a padlocked safe. Climbing over the back of the safe is a bright green, octopus-like object.

### Motivation

It seems to be one of the facts of school life that many children experience failure many times. If it is true

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that success leads to higher levels of aspiration and that repeated failure leads to withdrawal, then the opportunities for success which art provides warrant examination.

When the art teacher genuinely values individuality of expression as highly as skill, when she respects the qualities in a student's work that are uniquely his own, she is virtually saying that she values and respects him.

Esthetic abilities are evident in the work of young children everywhere. They are the normal human heritage. Degrees of ability vary. The mathematically talented may become mathematicians, but we all can make use of arithmetic. In art, however, there seem to be so many pressures that talent is often smothered.

## Use of Symbols

Until he is about ten, the average child disregards what he sees, and depicts what he knows through symbols. As with reading readiness, the results of premature exposure to color charts, perspective, rules of composition and the like will be temporary and a waste of time at best. At worst, he will feel defeated.

Or, we may give him only large brushes and paint, and permit him to make abstractions as though creativity was limited to uninhibited, non-representational expression.

Sometimes talent is all we look for in a child's picture, and if we happen to decide he hasn't got it, we let him know. Frustration and discouragement often solidify into what is known as lack of talent.

An art form is a lasting reminder of what has been accomplished. For the exceptional child, it is evidence that he has abilities as well as disabilities. The sense of achievement, of recognition, a heightened self-esteem may encourage the child who tends to withdraw to try in other areas. Perhaps it can help raise levels of abstraction through transfer of training[14] and reciprocal functioning. H. R. Myklebust raised a question which seems to apply:

> "We have assumed that if the language behavior of the deaf could be improved, there would be a concomitant improvement in the use of abstraction. However, is the reverse of this assumption equally valid? If we can raise the level of abstract behavior will there be a concomitant improvement in the use of language? Are these not reciprocal functions and therefore, might it not be possible to raise the level of either by emphasizing development of the other?"[15]

The compensations of sight should not be underestimated. Blind and deaf, Helen Keller's need for language, in order to think and communicate, must have been desperate. The need of the deaf child, whose vision is unimpaired, is far less urgent.

Nor should we underestimate the compensations of art. For some, it is a way of life, enlisting their utmost conceptual power and skill. Art has always been a channel of communication, what Buber called a "dialogue." In the words of Ernst Kris, the artist's message is "an invitation to common experience in the mind."[16]

The mere existence of an art program by no means guarantees good art experience. The teacher's philosophy and skill are essential. This paper has been predicated on the belief that art education is a means to an end, not the end itself: that the art teacher is like the teacher of the deaf whose work is "to develop the faculties of her pupils through language rather than to teach language itself."[17]

## Conclusion

It has been submitted that the deaf child may be retarded in abstract thinking not because he lacks capacity, but because he lacks opportunities for developing his capacity for abstraction:

*(Continued on page 417)*

that art education can provide opportunities by exercising imagination, association, memory, perception, organization: that art also offers opportunities for emotional adjustment by revealing feelings, as an outlet, and as a means of controlling environment: that opportunities for success in art might transfer motivation to other areas.

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## 3. Art Education and the Education of Deaf Students, Coauthor, John Harrington

*The Volta Review* and *Curriculum, Cognition, and Content*, Vol. 70, No.6, 1968

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*For children with language and hearing impairments, art education can provide a means of reinforcing their perceptions and give them a medium for expression that, although nonverbal, furnishes an opportunity to relate to the viewers as well as to the people and events depicted. Art, as a means of projecting feelings and even expressing socially unacceptable feelings, may furnish a relief from tensions, confusion, loneliness, and fear. Two art education demonstration projects showed that art education for deaf students should be more than imitative, and that there are special values inherent in art activities for deaf persons. The projects also indicated that deaf persons are more visually creative than was supposed, and that deaf children and adults participating in the projects were capable of originality and sensitivity. Also indicated was the possibility of greater vocational opportunities for deaf persons in the field of visual art.*

THE NATIONAL ART EDUCATION ASSOciation, a department of the National Education Association, issued a position paper describing "The Essentials of a Quality School Art Program."[1] The first three recommendations were that art programs in elementary and secondary schools should provide experiences in examining objects intensively, in expressing ideas and feelings, and in experimenting with art materials and processes. It would appear, particularly in the light of current thinking about the intact nonverbal abilities of deaf children and the value of fostering the relationship between these capacities and early language development, that educators of the deaf would have made extensive use of art to help deaf children express themselves and their ideas through drawing, painting, modeling, and other creative, nonverbal activities.

The majority of the experts[2] in the field of art emphasize development rather than imitation and the simple acquisition of art skills. Yet it would appear that art programs in schools for the deaf emphasize, for the most part, imitation rather than individual expression and experimentation.

The following types of activities are typical of approaches seen in art classrooms in schools for the deaf and are offered to dramatize operant philosophy rather than as criticism: Copying a Christmas tree ornament made from construction paper by the teacher; coloring areas of a design outlined by the teacher; copying (in paint) photographs clipped from magazines; drawing still-life pictures to illustrate words; copying the shapes and colors of an abstract painting done by the teacher. There was a restriction in the free use of materials; there was consciousness, not of the pleasure and productivity of the various media, but of economy and functionalism. Children were given demerits for breaking crayons or wasting paper; they took turns with a single brush and jar of paint; in ceramics they poured clay into molds, instead of creative modeling; sometimes art work was given as an academic homework assignment.

## SPECIAL VALUES OF ART EDUCATION FOR DEAF PUPILS

The fundamental recommendation made in this article is that children be encouraged to paint or draw something of their own rather than be required to follow directions. The approach to be delineated briefly later is one that not only meets the already mentioned criteria for a good art program for *all* children, but that, in the opinion of the authors of this article, has special values in the education of children with language and hearing impairments. We will attempt to describe three such major values:

### OPPORTUNITIES FOR CONCEPTUALIZING

A child who lacks or is limited in language would benefit from every means that can be provided to reinforce his perceptions and organize his experiences visually. Art symbols, like language symbols, are a means of labeling perceptions; the drawing of a man, for example, is a generalization, a symbol for a class of objects, just as the word "man" is a generalization and a symbol.

Sentences are structured forms that enable us to organize and remember details; it is easier to remember a group of words in a sentence than it is to remember the same number of random words. Similarly, the drawing of an event is a structured form that can organize details to preserve what might

*John Harrington*

*Rawley Silver*

otherwise be forgotten. The child who is limited in verbal expression and cannot talk about a hypothetical event can draw a picture dealing with actualities and possibilities and classifying according to abstract principles.

It is frequently stated that a deaf child lacks imagination and the ability to do abstract thinking. Perhaps it would be more accurate to say that he lacks opportunities to use his imagination. The child who is deficient in language is restricted in the ability to enjoy imaginary play such as that of a child with normal hearing who listens to fairy stories or talks about being a ferocious lion. If a child who cannot *talk* about an imaginary experience were to paint it or draw it or to model it, he would be engaging in imaginary play and might also be enabled to share, sustain, and extend it.

### OPPORTUNITIES FOR COPING WITH ISOLATION AND FRUSTRATION

Although painting can be conceived of as withdrawal into a private world, it is also clearly an act of communication. A child or adult generally paints with the expectation that his picture will be seen and interpreted. By painting the people or events that interest him, a deaf child is able to relate to his viewers and to the people and events that he has recorded. He punishes his villains and rewards his heroes; changes painful experiences into pleasant ones; and alters the appearance of people, places, and things at will.

By manipulating his subjects, he exerts control over his environment; by projecting his feelings, he expresses unacceptable feelings in an acceptable manner, and may thereby obtain relief from tensions, confusions, loneliness, and fear.

### OPPORTUNITIES FOR ASSESSMENT

The painting or the drawing which is a shared experience is also a record of what the painter finds important. The painting of a deaf child who has been encouraged to be free in his pictorial efforts provides clues to the level of his cognition or to the characteristics inherent in his perception of himself and of others. Much is also to be gained from an evaluation of the level of creativity expressed in art work; in the organization of the product; in the appreciation and use of colors; in the association of related and apparently unrelated events, objects, or persons; and in the ability to initiate, carry through, and complete a nonverbal activity.

Whether or not a deaf child's painting conveys important messages or serves any of the indicated purposes, his *aptitude* for art and his growth in art ability will depend very much on the way in which art is taught. If children with normal hearing are thought to be superior to deaf children in creativity and art (we will present data to the contrary), it may be due to the inroads of teaching methods upon the abilities of deaf pupils, not to deafness itself or to lack of aptitude.

Can art be taught to deaf children in a way that brings out basic aptitudes for art?[3] Can the deaf person be visually creative? Can the language impaired child conceptualize pictorially when encouraged to do so? Are deaf children capable of expressing themselves and their ideas individualistically despite their impairments in verbal language? Do deaf people find consolation in art expression? What do their freely expressed pictures and paintings reveal?

## TWO DEMONSTRATION PROJECTS

Two demonstration projects set out to explore these questions. In the first project, experimental art classes were provided at three schools for deaf children and at the School for Language and Hearing Impaired Children (formerly known as the School for the Deaf at P.S. 158, Manhattan). The drawings and paintings were evaluated (using questionnaires) by a panel of

20 specialists—psychiatrists, psychologists, professors of special education, and educators of deaf, aphasic, and normally hearing children.

The judges were asked if they found evidence in the pictures that art afforded opportunities to generalize, imagine, remember, associate, evaluate, and express ideas and emotions. They were also asked whether they found evidence that would be useful in assessing various abilities, interests, knowledge, attitudes, and needs.

Of 337 answers to the questions, 93% affirmed that the pictures did provide this evidence: 5% of the responses were qualified; and 2% denied the presence of such evidence.[4]

The second project, done under a grant from the U. S. Office of Education, was a study of the aptitudes and interests of deaf persons and of vocational opportunities for deaf persons in the visual arts. A second objective of this study was the development of effective methods of instruction. Fifty-four deaf, aphasic, and hard of hearing children and adults attended experimental art classes at the New York Society for the Deaf and later at the School for Language and Hearing Impaired Children. . It is important to indicate here that the participants were not selected for special talent, but were accepted from among interested applicants in the order in which their applications were received.

Five assessments took place in which these students were compared with hearing counterparts. It was concluded that deaf people have as much aptitude for art as do hearing people.

Two of the assessments were made by panels of art educators who did not know that they were judging paintings done by hearing impaired students. In one evaluation, hearing impaired children achieved slightly higher scores than their hearing peers but deaf teenagers had slightly lower scores. The highest score went to an aphasic boy who achieved 44 points out of a possible 45. In the second evaluation, the combined average score of the deaf participants was slightly above average for the hearing, despite a decided advantage for the hearing in that six of the deaf teenagers were compared with hearing art students in colleges.

In the third assessment, eight hearing impaired students scored in the 99th percentile on the Torrance Test of Creative Thinking, which is designed to measure creativity in general, not specifically creativity in visual expression.[5]

In a fourth measurement, 9 of 11 observers found the hearing impaired students equal or superior to hearing students in independence, originality, sensitivity, expressiveness, and interest in art. In a fifth assessment, a painting produced in one of the experimental classes was submitted to a juried exhibition and was one of 85 works accepted from 200 entries; it was one of 12 works that won an award.[6]

The techniques developed in the two demonstration projects just described were successfully applied during the summer of 1967 in a Title I project for the moderately to severely hard of hearing conducted at the School for Language and Hearing Impaired Children.

We have tried to be brief in the presentation of evidence. Those who wish to read the results of the two projects in greater detail can consult the references.[6] This evidence has been presented to help dispel the belief that the deaf are unimaginative and excessively concrete in their art work and to encourage schools, educators, and teachers of the deaf to make greater use of art experiences in educational programs for the deaf.

Toward this end a brief outline of methodology is offered. It might be noted that the art program described can be implemented by a teacher who has no particular training in art, although it is suggested that the overall supervision of the art program of a school be done by someone thoroughly trained in the field of art.

31

### BRIEF DESCRIPTION OF METHODOLOGY

The teaching procedures used are the same as those used for hearing pupils, with several shifts in emphasis.

It was hoped that deaf, aphasic, and hard of hearing students would depict their personal experiences and their reactions to them and would use their paintings for communication. Consequently, the emphasis was placed upon the *message* rather than upon the *form*, on *what* was expressed rather than on *how* it was expressed.

No attempt was made to dissuade either those pupils who preferred to experiment with abstract forms or those who tended to draw from observation. The instructor watched for opportunities to encourage reflection and to draw students out rather than to fill them with "information."

Language was minimized in the experimental art classes and in the summer project because communication in art is basically nonverbal. Emphasis was on demonstration, on the display of reproductions of works of art that convey art concepts, and on films that demonstrate techniques (produced by ACI Productions, 16 West 46th St., New York, N. Y.).

Emphasis was placed upon encouragement and upon avoiding experiences that produce anxiety. It is not possible to cajole or to force the free outflow of personal reaction or reflection; it takes several periods of relaxed and confident expression before the pupils begin to feel secure enough to practice without fear of being judged. As Torrance has demonstrated, children repress creativity when they suspect disapproval.[2] This does not suggest insincere and meaningless praise of the work done; instead, it suggests waiting patiently with higher but private expectations.

Students used thick poster paints that they mixed with palette knives on cafeteria trays. Each helped himself from pitchers filled with five basic colors—red, yellow, blue, black, and white. The first class was usually a demonstration showing that red mixed with yellow becomes orange, that adding black changes orange to brown and that adding white changes brown to beige. The demonstrations were designed to encourage the pupils to explore for themselves. Each student chose or mixed his own colors.

Students in the experimental programs utilized the opportunity to work independently. The instructor intervened only when lack of skill threatened to frustrate the progress of the student. For example, she would help the student who was attempting to paint with a brush that was too dry or one that was too large or too small. The more effective approach or technique would be demonstrated on a piece of paper or on the blackboard, but never directly on the student's work.

### SUMMARY

Art education in the education of deaf students should be more than academic or imitative in nature. A number of special values for deaf individuals are seen to be inherent in art activities. The assessment of art work produced by deaf persons indicates that they are more visually creative than was formerly supposed, and that under appropriate circumstances deaf children and adults are capable of originality and sensitivity in the visual media. The authors feel that with higher expectations in art education for deaf students, greater success, satisfaction, and possibly increased vocational opportunity in the field of visual arts for deaf people can be achieved.

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## Post script

John Harrington, co-author, was the school principal who had agreed to let me teach art, providing I enrolled in graduate school, as mentioned in the Prologue.

After the three articles were published, an exhibition of drawings and paintings by these students titled, *Shout in Silence, Visual Arts and the Deaf,* was circulated by the Smithsonian Institution Traveling Exhibition Service. Between 1969 and1976, the Service sent letters, clippings, and photos which I copied and forwarded to the children and adults whose work was displayed.

When the tour ended, the Metropolitan Museum of Art hung the exhibition in its 81st Street Gallery, published a catalogue (Silver,1976/1993), and invited the exhibitors to an opening celebration. By then, the children had become teenagers, one of whom brought along a portfolio of work. Subsequently, the paintings and drawings were returned to the individual artists (whenever possible), and the letters, clippings, and photos were donated to the Gallaudet University archives.

The exhibition and articles prompted letters from or about deaf individuals here and abroad. These letters were also donated to the Gallaudet archives.

# 4. The Transfer of Cognition and Attitudes of Deaf and Aphasic Children Through Art

Keynote address presented at the Symposium on Art for the Handicapped,
Northern Illinois University, March 17, 1972.

Distributed by the State of Illinois Instructional Materials Center,
1020 South Spring Street, Springfield, IL 62706

Dr. Fairchild, Dr. Allrutz, ladies and gentlemen:

I am delighted to have the chance to participate in this symposium, and to express my thanks to Dr. Fairchild in public. It is largely because of her approach to teaching art that I have continued to work with handicapped children, and what I have to say today is intended to honor a great teacher by showing that her endeavors are very much alive in New York, as they undoubtedly are in many other parts of the country.

This paper is concerned with answers to five questions: Can art education prompt a brain-injured child to organize and represent his experiences? Can it kindle the desire to learn language in a child who is deaf? Can art experience affect the behavior of a disturbed child? Can drawings and paintings by these children provide useful clues to what they know, or how they think and feel?

In spending my time on these questions, I don't want to give the impression that aesthetic values are less important. My concern, however, is whether art education can go beyond art per se, and if so, whether it should. This, in essence, is the fifth and last question: should art educators be asked to serve any goals other than their own?

The answers, I believe, lie in the special opportunities in art for educating children in general, and handicapped children in particular. These opportunities derive from the process called transfer of learning, the transfer of intellectual abilities and attitudes, rather than art skills. Jerome Bruner has called this "nonspecific transfer" as opposed to "specific transfer" (1961, p. 17), the learning of general rules that can be applied in a variety of situations.

The physiological basis for transfer lies in the adaptability of our nervous system. A variety of stimuli can provoke us to make a particular response, and we can achieve a particular goal through a variety of means. For example, we can identify a melody regardless of the key in which it is played, or the musical instrument which plays it, as D.A. Barnett, an ethologist, has pointed out. We recognize certain patterns as "the same" - auditory or visual or tactile - because they have relationships in common (p.11).

We also generalize in our response. A man who has learned to write with one hand, can learn to write with the other, or even with his foot. This tolerance of variation in recognizing stimuli and responding to them usually develops with experience, and one of the most remarkable facts about it, is that learning to do one task improves our skills at other, similar tasks (pp. 11-12).

Transfer has also been explained in terms of its survival value. The basic motivation of an experiencing organism is "maintaining, actualizing, and enhancing" its capacities (Allport, p. 16). If it is prevented from reaching its goal, or norm, in the ordinary way, it will be resourceful and try to attain the goal another way. "The end rather than the means seems to be the important thing" (Sinnott, p. 33).

A handicapped child, then, like any other experiencing organism, has a highly adaptable nervous system. His basic motivation is to enhance his capacities and fulfill his potentials, and he can be expected to be resourceful. If disabilities prevent him from developing in the usual way, he is likely to try to find alternative techniques.

One more biological observation is needed before turning to the usual way in which a child develops. In most laboratory experiments, when animals are trained to perform some task, the inducement is a reward. Reward nearly always strengthens a response, but punishment does not always weaken it (Barnett, p. 39).

One reason why punishment is likely to fail is that the punished individual is apt to generalize the effects of an unpleasant stimulus to all surrounding circumstances. Laboratory animals respond with flight from the whole situation of an unpleasant experiment. Some refuse to eat in an apparatus where they previously experienced a blast of air while eating (p. 172).

Pleasant stimuli are also generalized. An animal which has been rewarded with food for learning to run a

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maze, can usually learn another maze more readily than the first (p. 176).

Art activities are sometimes so pleasant that they are considered play *instead of* learning, but the rewards in art experience, and the energy it generates, could conceivably carry over to other school situations.

In other words, the transfer of learning occurs largely because of the plasticity of the nervous system which generalizes not only in solving particular problems, but also in solving problems in general. Nor is generalizing confined to solving problems. There is evidence that transfer occurs in three areas - attitudes, intellectual abilities, and creative thinking.[*]

Recent theories of learning assume that all learning is a meaningful organization of experience and response (Taba, 124), and one theory, of particular interest here is that learning takes place when a learner uses new information appropriately in a new situation, in his own way, for his own purposes (Stratemeyer, 80). Can an art class provide the new situation in which a learner uses new information appropriately? Can art procedures take the place of the usual procedures of learning and thinking when the usual procedures are blocked by impairments?

The development of cognition in children has been studied intensively by Jerome Bruner and his associates at the Center for Cognitive Studies at Harvard. They find three "techniques of knowing," three ways in which a child organizes and represents his experiences of the world - through his own actions, through images, and through symbols.

The infant learns about things by manipulating them. At first, his perceptions are governed by external stimuli; later, by his intentions. He matures from diffused distractibility to leading his hand toward an object. He guides his manipulations visually, developing skill in coordination until, by the age of nine months, he can render the sequence of reach-grasp-retrieve-mouth even when he loses visual contact with his hand. Then, freed from constant visual supervision, his gestures become freed from the fixed sequence. In other words, when he no longer must look at his hands while reaching, or grasping, or retrieving; his actions gradually acquire a freedom for use in a variety of contexts (1969, p. 234).

This suggests that transfer of learning starts out through eye and hand, not ear and speech. It seems to be visual and motor abilities, rather than language, that provide the initial strategies for processing information.

As the child becomes freed from dependence on his motor actions, he depends increasingly on images. In this second stage of cognitive development, he "knows" something by means of its image. He learns to identify a particular knot, for example, because it looks like a three-leaf clover or a pretzel.

Imagery remains the child's major instrument of thought until, around the age of seven, he develops the ability to symbolize. This ability, the third technique of knowing, reduces his dependence on images. Appearances are sometimes deceiving, and the clues he needs for generalizing his experiences are sometimes invisible. Symbols, on the other hand, permit him to discover common properties of objects which do not *appear* alike. For example, six year old children, asked what banana, peaches, and potatoes have in common, tend to look for the same color or shape. Older children, however, tend to group them as food, an invisible, abstract category of function. The ability to symbolize frees a child from dependence on his perceptions. It also frees him to experience a broad range of events vicariously, and to experiment with alterations of his environment without having to "raise a finger by way of trial and error" (Bruner, 1966, p. 49).

The interaction between these three techniques of thinking, through actions, images, and symbols persists as one of the major features of adult intellectual life, and in the usual course of development, language becomes the preferred instrument of thought.

It seems to be taken for granted by Bruner that language is essential for symbolizing. This is a reasonable assumption for an articulate person, from a highly verbal society, who has not come up against language impairments. Even though symbolizing *usually* employs language, it does not *always* do so. Abstract ideas can be represented though images, and words can be used concretely, simply to represent physical objects. Like drawings, words are instruments useful either for conveying direct perceptions, or abstract ideas, or both. Children and artists use the same art materials. Children, poets, and scientists use the same words. What matters is what they do with the words or the art materials.

The kind of thinking required for solving problems in the visual arts may be *qualitatively* the same as the thinking required for solving problems in science, and even scientists may rely on imagery rather than language. Consider this statement by a scientist whose credentials should be impeccable, Albert Einstein:

> The words or the language as they are written or spoken do not seem to play any role in my mechanism of thought. The psychical entities which seem to serve as elements in thought are ...in my case, of visual and some of muscular type. Conventional words or

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[*] Guilford, 1959, P. 401; Taba, 1962, P. 123; Torrance, 1962, P. 198.

> other signs have to be sought for laboriously only in a second stage ... (Arnheim, 1965, p. 2).

The fact that imagery is associated with earlier stages of development than symbolizing, implies that it is more rudimentary than symbolizing, but there is scientific evidence that some individuals retain a strong reliance on visual representation. Studies by H.A. Witkin and his associates have found that there are generally preferred modes of perceiving with characteristic differences in ability such as picking out a simple figure obscured by a complex design. Their "results" suggest that basic characteristics of individuals are established early in life, and for some, imagery remains the basic instrument for thinking (p. 375).

We draw inferences about a child's cognition and attitudes by observing his behavior. Language is a behavior that reflects his thinking, and intelligence tests usually involve language. But they are often unreliable for measuring the intelligence of a child who cannot learn language naturally. Even though his capacity for language may be severely impaired, his capacity for symbolizing and reasoning may be intact. If he cannot easily understand language or make himself understood through language, he may find images an effective alternative.

Can we draw inferences about the cognition or adjustment of a language-impaired child by observing his behavior in the art class, or examining the drawings and paintings he creates? Painting a picture involves visually guided motor activity. It can be a way of representing abstract ideas or concrete objects and their relationships. It can permit him to experiment with altering his environment, or experience vicariously a broad range of events. Furthermore, he may be tempted to draw pictures about his experiences if only because he can bypass his verbal weakness and capitalize on his visual strength.

With this rather lengthy introduction out of the way, I would like to return to the questions with which I began, and show you some slides so that you may judge for yourself.

1. Can art education prompt a child to organize and represent experiences?

This drawing (Fig. 1) was made by Carmen, a twelve year old girl with language and hearing disabilities. It shows sad and smiling faces, and beneath them, in large letters, the words, "sad or happy." No topic had been suggested in the art class.

By chance, her classroom teacher saw the drawing and became very interested. She said that earlier in the day she had been teaching about alternatives and opposites. Presumable, Carmen had made use of the art period to think about and practice using these concepts. Since she used them appropriately in a new situation in her own way for her own purposes, she seemed to have learned about alternatives and opposites, and incidently, provided her teacher with evidence that Carmen, at least, had understood.

If she had normal hearing and the usual facility with language, Carmen might have talked about alternatives. Since she drew a picture instead, her behavior seems to support the belief that a child with a language handicap, being resourceful, will make use of art procedures to generalize new information, when the opportunity is available. She seems to have used her drawing to reinforce her learning, or increase her mastery over an abstract idea. In doing so, she also seems to have demonstrated a transfer of learning from the home classroom to the art class.

Another illustration is provided by this painting by Steven (Fig. 2), a boy with brain damage and profound hearing loss, as well as a history of cardiac and other surgery. It, too, came as a surprise to his classroom teacher who said she had been trying to convey the verbal concepts, "near" and "far."

By way of contrast, Lisa seems to use art activities for a different purpose. Instead of depicting information presented by her teacher, she has generated her own. In her first drawing (Fig. 3), she presents a girl in trouble - in deep water, so to speak. She calls, "help! help!," and her rescuer answers, "OK!"

In her second drawing (Fig. 4), Lisa gives names to the girl and boy, and presents them sailing in a boat. John is saying, "I love you," and Jackie replies, not so appropriately, "Oh thank you."

In inventing romances, Lisa seems to use art to experiment with altering the environment. This behavior is characteristic of hearing children. The usual procedure is to "substitute words and sentences in place of events in order to have a trial run on reality," as Bruner has put it (p. 58). It requires the ability to symbolize and to hypothesize. Lisa, and Carmen as well, found an alternative to words and sentences for achieving similar results. They substituted the images in their drawings in the place of events, and had trial runs of their own.

A child who has difficulty acquiring words with which to label his experiences, may also have difficulty pinning down new information long enough to integrate it with what has been learned in the past. Lisa and Carmen seem to have sustained imaginary and real experiences while they were drawing them; Lisa representing concrete objects and their relations in an imagined event, Carmen producing a symbolic representation of a real event. All three drawings involve visual, motor, and verbal interaction.

2. Can art education kindle the desire to learn language in a child who is deaf?

In the drawings, so far, art experience apparently served to reinforce cognitive patterns set by language. Can it also set patterns for language to follow? In depicting an event, and subsequently perceiving words that describe the event, a deaf child might conceivably have greater interest in acquiring the words that label his experience.

This seascape (#5) is the work of Ira, a deaf child age nine. It is a structured form, like a paragraph, describing differences between whales, dolphins, eels, swordfish, and sharks. The fish were not identified by name in the art class. Ira has asked permission to take his drawing home, and when he returned it for an exhibition at the end of the term, the names had been added. His behavior and his drawing suggest that art experience prompted Ira to recall what he knew about fish, describe his information, show off his conception of different classes of fish, and later, somehow, identify them by name.

In this drawing (#6) by Sam, a 16 year old youth with central and auditory impairment following meningitis, we are shown the scene of a sordid murder replete with a variety of clues as to who did what, where, why, and when. The only writing is a jumble of letters and numbers on the telephone dial. Could Sam's classroom teacher have used this drawing as a key to the words which had particular attraction for him?

The classroom teacher of another youth, Billy, capitalized on this drawing (#7) by trying to transfer his interest in aviation to language. She happened to visit the art class just as he was painting the barbed wire fence. She discovered that he did not know the word "barbed wire" and taught it to him then and there, placing his hand on her cheek and repeating the word until he was able to say it himself.

One of the most unfortunate consequences of inferior language in a deaf child is the assumption that his language reflects his intelligence. But consider this painting of a skull and crossbones saying, "I love you children" (#7a). It is the work of Richard, a deaf child of twelve, who had exceptionally poor language skills for a deaf child his age, according to his classroom teacher, and he asked for help from me in spelling "children."

He became rather fluent, however, when he combined a few words with a drawing. The image he chose is a symbol, and his statement denies the symbol. It does more than deny it, as a matter of fact, it is false in itself as well. In other words, having depicted an image which stands for poison, Richard added sweet words to disguise the taste, as it were. Since the words are patently insincere, they reinforce the warning in his image. His painting, then, is ironic, a statement of affection intended to mean the absence of affection, a visual form for the old saw that people say one thing but mean another. What I am suggesting is that Richard is bright and rather sophisticated for a twelve year old, judging from the clues in his painting. If we had to depend on his language in order to judge his intelligence, we might easily assume he was dull. (Perhaps it should be said that this topic had not been suggested to Richard. If it had been, of course, his drawing would be a clue to my thinking, not his.)

3. Can art education alter the behavior of a disturbed child?

The behavior of Eugene seems to illustrate a transfer of attitudes which developed in the art class and were carried over to other school situations. He was a 10 year old boy whose diagnosis had not been determined. Whether he was deaf or aphasic was obscured by multiple emotional problems, according to a psychological report in his school file. Although his IQ was 89 (Otis), the report found average or above average intelligence and high potential. It described him as pugnacious, inclined to withdraw when thwarted, and unable to work persistently. He lived with his mother and three siblings, his father having disappeared. According to his teacher, Eugene had little concept of right and wrong. He bullied other children and created disturbances and his behavior was so unpredictable that on the day before the art classes began, he was required to stay at school while his classmates went to the zoo.

It happened fortuitously, that the art classroom was directly across the hall from Eugene's classroom. In addition, there were large glass panels in the doors, and the art period ended just as lunch time began. Eugene's classmates formed a line in the hall, and since he was its only member in the art class, they were curious about what he was doing. Eugene was quick to take advantage of the captive audience, and held up his picture for all to see. The first week, he drew a picture of his family. Where his father might be expected to stand beside his mother, there is, instead, a picture on the wall. The second week, he painted a read sailboat on a blue sea. The third week, he painted a devil (#9) which was admired extravagantly, and he was escorted away to lunch in triumph.

When I appeared in the hall for his fourth art class, Eugene's classmates who sat facing the door, notified him with great excitement. That day, he painted a large butterfly (#10) in brilliant colors, and I learned from his teacher that shortly before the art class began, he had found a small, dead moth. The fifth week, he painted galloping horses; and the sixth, two pictures of Jack the giant-killer (#11).

Since the seventh art class was held at a different hour, I called for Eugene, as arranged, and noticed that most of the art work displayed on the walls were Eugene's productions. I asked his teacher if she would watch for any changes in his behavior, and to my surprise, she answered that he was "so well behaved now." He was in charge of class lines, responsible for keeping his classmates in orderly rows. She attributed the change to his special importance as an artist.

A classmate, his arm across Eugene's shoulder, begged their teacher to let him attend the art class just for one day, and she consented. The guest was excited and somewhat noisy at first, and I expected a problem of discipline. As time passed, however, it became evident that his excitement was an overflow of high spirits. He was cooperative and most anxious to please, and his picture was a flattering imitation of Eugene's picture, step by step.

The experiment ended soon after, and I asked teachers of the students who had participated, to fill out questionnaires. One question asked if they had noticed any changes in behavior, and Eugene's teacher answered "yes." She wrote, "Eugene still fights easily but is showing some improvement in helping other children with art...he seems more attentive and is showing slight improvement in being a better sport...He is especially proud of his art work, and there is some carry over of this confidence...he has a very difficult home situation and is hurt by neglect of his father. The special attention he gets from his talent is aiding slightly this lack of attention of home."

These modest changes in behavior suggests that Eugene's accomplishments in art had given him new status among his peers, and that he had monitored himself through his paintings. His ability, compared with his classmates, was, indeed, superior. Their respect could be expected to confirm what he probably observed himself. Their open admiration for this sailboat may have inspired him to paint an even more admirable picture, the devil, which, in turn, produced greater admiration, and so on, stimulus and response reinforcing one another. The stimulus of reward inducing an output of energy, and the effect of the pleasant stimulus becoming generalized in other school situations.

The fact that the art classroom was across the hall from his classmates certainly helped. It may have been the crucial factor. At any event, Eugene's attitudes toward himself and his classmates seems to have changed; the change seems to have been triggered by his art experience; and his new attitudes seem to have transferred from the art class to his home classroom.

## 4. Can drawings by handicapped children provide useful clues to what they know or how they think or feel?

Some children seem to use their drawings to convey information, like this drawing of a hypodermic needle and other paraphernalia associated with taking drugs (the artist had just celebrated his twelfth birthday) (#12).

Other children seem to use their pictures to fulfill their wishes, vicariously. Kenny presents himself astride a motorcycle with a girl friend holding on behind (#13).

Lucy simply painted words (in orange, blue, and purple): "$90,000 / I have more money" (#14).

The child who made this picture first drew the man and woman in pencil, then painted cuts and bruises on their faces. And ended up drawing bandages on their wounds, which suggests that his anger had been dispelled after being expressed, vicariously, in the drawing (#15).

A sense of isolation is often half hidden in family portraits by hearing and language impaired children. In this drawing Maureen separates herself from her family with a red and yellow flame-like shape (#16). Robert uses a line (#17). This drawing is the work of a fourteen year old girl who identified herself as the small figure on the right, although she was taller than I am (#18). This drawing is by a girl who had a higher opinion of herself, presumably, because she presents herself as the largest member of her family. Even so, the group is well composed without her, and she seems to have been added as an afterthought (#19).

Some drawings seem to provide clues to a child's cognition. This was painted by Stuart in his first art class (#20). He had asked what he should paint, and I had answered, "paint whatever you like." The result was "pancakes on a plate with butter" - his title. We may find this amusing, possibly because we are surprised by the concreteness of his response. They are what Stuart likes to eat, literally, and as such may be a clue to something other than fondness for pancakes.

## 5. Should art teachers be asked to serve any purpose other than their own aesthetic goals?

Some take the position that art should not be used therapeutically, that using art for any purpose other than to impart information demeans art education and interferes with learning in art.

I disagree. Aesthetic and therapeutic goals do not necessarily conflict. To the contrary, they seem to reinforce one another. It is not a matter of having to choose between them, I believe, but of making the most of both.

One way to clarify an issue is to obtain relevant information that can be quantified. I have tried to do this by means of evaluation, for aesthetic quality, of paintings and drawings made by my students. Six assessments have been undertaken.

In the first assessment, twenty art educators judged paintings by twenty-five deaf children. They looked for evidence of skills, sensitivity to art values and specific qualities of subject matter and technique. They also compared the paintings with the work of hearing children of about the same ages. Eight judges found no differences. Seven found the deaf children less mature, but four of these added comments suggesting that the cause of immaturity might be other than deafness, and two found the deaf children superior in aptitude for art.

Of a total of 260 answers, 93% affirmed that the pictures did provide this evidence (Silver, 1966).

In the second assessment, paintings by twenty-two deaf and twenty-two hearing art students were evaluated by three university professors of art, using rating scales. The paintings were identified only by number and, if by children, the ages of the painters. As a result, the deaf children and adults received slightly higher scores than their hearing peers, while the deaf teenagers had slightly lower scores. The highest score went to a thirteen year old aphasic boy, 44 points out of a possible 45.

In the third assessment, portfolios of work by 16 deaf students were evaluated by 13 art teachers who compared the portfolios with the work of their own students. They did not know the painters were deaf nor were they informed about the purpose of the project. The combined average score for the deaf was slightly above average for the hearing. This occurred despite a decided advantage for the hearing in that six of the deaf teenagers unfortunately were compared with hearing students in colleges and in art schools at the graduate level.

In the fourth assessment, eleven teachers observed the art classes and compared the students with hearing art students in independence, originality, sensitivity,expressiveness, and interest in art. Nine of the eleven judges found the deaf equal or superior to the hearing in each of these categories.

In the fifth assessment, a Torrance Test of Creative Thinking was administered to 12 deaf students. Eight scored in the 99th percentile, and the composite average score of all 12 placed them in the 96th percentile.

In the sixth assessment, a painting produced in the project art class for adults was submitted to an annual juried competition. It was one of 85 works accepted from over 200 entries, and one of 12 works receiving an award (Silver, 1966).

To summarize, then: The handicapped child, like anyone else, has a highly adaptable nervous system. A variety of stimuli can provoke him to make a particular response, and he can achieve a particular goal through a variety of means. If impairments prevent him from developing in the usual ways, he is likely to try out alternative ways for solving his problems and using his talents. He is also likely to generalize the learning experiences that he finds rewarding. Although language is the usual instrument for thinking, images also serve this function, even for some highly intelligent adults. Interactions between visual perceptions and motor responses are important factors in learning, and we can draw inferences about a child's learning by observing his behavior.

Art experience can play a crucial role in each of these processes. The handicapped children who participated in these studies, seemed to use art procedures in much the same way that unimpaired children use words and sentences - as techniques for organizing and representing their experiences of the world. They seemed to do spontaneously, through the process of generalizing, painting pictures in order to amplify their perceptions or form concepts or reinforce learning or ventilate anger or fear in a socially acceptable way; or control, vicariously, the people and objects they depicted. Their drawings offer clues to attitudes and abilities that might be inaccessible otherwise. Their behavior suggests that art education can stimulate the transfer of learning from the art class to other school situations, and from various situations for the art class. Thank you very much.

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## 5. Cognitive Skills Development Through Art Experiences: An Educational Program for Language and Hearing Impaired and Aphasic Children

N.Y. State Education Department, Urban Education Project # 147 232 101, 1973

Educational Resources Information Center (ERIC) ED # 084 745

Since the project report consists of 102 pages, too long for inclusion here, three smaller reprints, labelled A, B, and C, take its place: A, the ERIC abstract, B, a paper presented at the 1974 Conference of the American Art Therapy Association which summarizes the report, and C, a statistical analysis of the projects' findings.

### A. Abstract Reprinted from ERIC ED # 084 745

Eighteen students, 9 to 15 years of age, from six classes in the School for Language and Hearing Imapired Children in New York City, learned mathmatical concepts of conservation, grouping, ordering, and spatial orientation through procedures developed for teaching and evaluating cognitive achievement of painting and drawing tasks. The students were taught in three 40 minute classes 2 days each week. Classroom teachers participated in weekly service workshops. Two teaching procedures (such as locating a doll on a model landscape) were developed for each of the cognitive areas (such as sequential ordering). Nine tests were developed and administered including a pretest and posttest of cognitive skills; a drawing test of ability to select, combine, and represent; an evaluation by an art therapist-painter; and a teacher rating scale. Also the Torrance Test of Creative Thinking was administered. Performances of the 18 children were summarized. The results indicated that the art procedures were useful in teaching conservation, grouping, ordering, and spatial orientation, as well as in evaluating cognitive and visuo-spatial abilities and disabilities, and that educators could go beyond art without neglecting development of art skills and values (Appendixes contain test instruments and detailed results for all students).

### B. A Technique for Developing Cognitive and Expressive Skills

## B. A Technique for Developing Cognitive and Expressive Skills of Children with Communication Disorders*

Paper presented at the 1994 Conference of the American Art Therapy Association.
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Normally, children develop cognitive skills through language. This paper will describe a study in which art procedures were used to develop and evaluate cognitive skills of children who had language and hearing impairments. The study was a State Urban Education Project conducted in a school for these children during the year 1972-3.

The study was also an attempt to integrate different points of view. Some therapists take the position that structuring art experience for children or adults will inhibit spontaneity and thus interfere with diagnosis and treatment. Some art educators feel that using art for therapeutic purposes will interfere with aesthetic growth and learning in art. And both therapists and educators have said that cognitive development is too remote from art to be relevant.

The study was based on the assumption that therapeutic and educational goals do not necessarily conflict: that we can structure art experience without being authoritarian and without sacrificing spontaneity or idiosyncratic responses: that we can look beyond art per se to cognitive and emotional goals without neglecting art skills; and that visual thinking through art forms can take the place of verbal thinking when language abilities are impaired.

By structuring art experience, I mean asking children or adults to do particular tasks, making deliberate selections of subject matter from the barrage of stimuli from the outside world, and asking them to make selections from the endless stream of their reactions and experience.

Obviously, structuring can stifle expressiveness, but if you simply offer art materials and ask them to draw whatever come to mind, you may get a response of agonized indecision, particularly from adults. I started off this way once with a child who asked me, "what should I paint"? I answered, "paint whatever you like". This was his response, entitled, "pancake on a plate with butter". (Fig. 1)

In my judgment, structuring can take place without interfering with spontaneity if we keep the structuring open-ended; that is, provide the children or adults with options, leave them free to make the crucial decisions, and give them the final authority. If there is only one correct response to a task, known in advance to the teacher, the structure is not open-ended. It is open-ended if there are many possible correct answers, not known in advance to the teacher.

Furthermore, I believe structuring can stimulate expressiveness rather than suppress it. Writers like T.S. Elliot and Joseph Heller have observed, that if one is forced to write within a certain framework, the imagination is taxed to its utmost and will produce its richest ideas. Given total freedom, however, the chances are good the work will sprawl (N.Y. Times, Book Review, October 6, 1974, p. 3). As a painter, I find that self-structuring works for me, also.

Martin Buber was much concerned with freedom in education and made some wise observations about the tendency to over-emphasize it. "There is a tendency to understand this freedom...as at the opposite pole from compulsion...But at the opposite pole from compulsion there stands not freedom but communion...freedom in education is...the run before the jump, the tuning of the violin...without it nothing succeeds, but neither does anything succeed by means of it..." (p.91).

One way to clarify controversial issues is to obtain relevant information that can be quantified. I have attempted to do this and will summarize the results later on.

First, a word about the children who participated. Their impairments were caused by damage to the brain. Some had difficulty producing language, that is, talking or writing. Others had difficulty comprehending language - interpreting what is said or written. Many had both kinds of impairment and peripheral deafness in varying degrees, and as might be expected, many had emotional disturbance as well.

Sixty-eight of these children participated in the study, half attending experimental art classes while the other half, who did not attend art classes, served as controls. The 34 experimental children were a randomly selected 50% sample of all pupils in six regular classes in the school. They attended weekly 45 minute art periods for about 10 weeks. Their ages ranged between 7 and 15.

Tests were developed to evaluate both groups of children before and after the art programs. In addition, the children were compared to normal children in that some of the tests were administered, once, to 60 children attending suburban public school.

What I propose to do is describe one of the structured teaching procedures and its pre-post tests, show slides of some of the drawings and paintings produced in the classes, and summarize some of the results.

### The Teaching Procedure

Thirty ink and watercolor drawings on 3x5" cards were presented to the children in two arrays. On one table, they included a variety of people and animals. On another table nearby, they included objects and more passive animals. The drawings were casual sketches, often incomplete, spread out on the two tables, near the door to the classroom.

When the children arrived, they were asked to look over the cards, select one or two from each table, then draw a picture about the subjects they had selected. They were asked to make their drawings tell a story, adding whatever they needed to make the story more interesting. They were also asked not to copy the model drawings but draw the subjects in their own individual ways. This may seem a difficult idea to get across to children with language and hearing problems, but very few children copied the models, and those who did at first, caught on quickly when they saw what their classmates were doing.

My intention was to suggest classes of subjects rather than particular examples of a class, to start the children thinking about relationships between the subjects that interested them, and to elicit their associations nonverbally, through drawings and paintings. In other words, it was aimed at the ability to associate and form groups, and to note changes in ability, if any, as a result of classroom experiences.

The first two art classes were structured in this way to encourage the children to relate the subjects of their drawings. In the second class, model cards of background scenery were added. Thereafter, their spontaneous drawings and paintings, as well as most of their artwork structured for other purposes, were evaluated for ability to form groups, as will be described shortly.

### Rationale

The idea of a group or class of objects is one of the three logical structures from which all the branches of mathematics are said to derive, according to Jean Piaget. Children as young as five can group on a primitive level. They can group circles or squares on the basis of shape, but they cannot group objects on the basis of class. For example, they may agree that all ducks are birds and not all birds are ducks, but if you ask whether there are more birds or more ducks in the woods, the five-year old is likely to answer, "I don't know, I haven't counted them". (1970, p. 28)

The idea of a group of objects is an example of a concept, and concept formation is one of the main channels through which impairments encroach on thinking. To quote Rappaport, "The effects of maladjustment...can be discovered earlier in concept formation than in other aspects of thought processes". In verbal concept formation, however, impairment may be disguised because verbal conventions often survive as "empty shells" even when the ability to form concepts is disorganized. (p. 100)

In the study, verbal conventions would be bypassed, of necessity, and nonverbal responses, through drawings, would serve as the main source of information. It was hoped the drawings would provide clues not only to cognitive skills but also to emotional problems. Thought associations are not simply a matter of cognition. They have emotional and unconscious sources as well.

The ability to form groups has special significance for children with language disorders because the two basic kinds of disorder are linked to the two basic operations in forming groups - selecting and combining. Receptive disorders are associated with disturbances of the ability to make selections and detect resemblances, with inability to break down a context such as a sentence into its component parts. On the other hand, expressive disorders are associated with disturbance of the ability to combine or synthesize the parts into a whole. In other words, selecting and combining have been the two fundamental operations underlying verbal behavior. (Jacobson, p. 25).

It was hoped that asking the children to select the subjects of their drawings from among the model cards, would provide the kind of limitation that stimulates imagination rather than retards it.

### Ability to Select

There seem to be three recognized levels of ability to select: the highest level is abstract or conceptual, the lowest level is concrete, and an intermediate level is functional. To illustrate, in experiment with normal children, it has been found that up to the age of about 7, a child tends to group objects on the basis of concrete, perceptible attributes, such as their color or shape. As he matures, he begins to take into account their function - what they do or what he can do to them. Gradually, by early adolescence, he develops true conceptual grouping on the basis of class - invisible attributes or abstract ideas. For example, asked in what way apples and oranges are alike, the young child is likely to say, they both are round. The older child is likely to say, both can be eaten. The adolescent is likely to say, both are fruit.

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In the present study, the children who were able to talk were asked why they had selected their model subjects - after they had finished drawing. But even when explanations were unavailable, their drawings were scored on a rating scale of 1 to 5 points; 1 point for selection which seemed at the concrete or perceptual level, 3 points for selection which seemed at the functional level, and 5 points for selection at the abstract or conceptual level.

### Ability to Combine

The ability to combine was also evaluated on a 5-point scale based on observations by Piaget and Inhelder who traced the development of ability to group in spatial as well as logical contexts. They found that prior to the age of 7, a typical child regards each item in isolation rather than as part of a comprehensive system. Gradually, he begins to consider objects in relation to neighboring objects, and to group them on the basis of proximity and separation. The 7 year old begins to relate objects to an external frame of reference, the bottom of his paper, drawing a parallel line to represent the ground and relating his subjects to one another along this line, or depicting them on the bottom edge of the paper itself. Gradually, his drawings become more coordinated as he takes into account distances, proportions, perspectives, and the dimensions of his paper (1967, pp. 430-446).

In response to the project tasks, a drawing received the lowest score of 1 point for ability to combine, if its subjects seemed unrelated, or related simply on the basis of proximity. A drawing received the intermediate score of 3 points if it showed a base line or if the bottom of the paper served as the ground. The highest score of 5 points went to drawings that showed over-all coordination, attention given to the paper as a whole, regardless of whether it was representational or abstract.

### Ability to Represent

It is one thing to perceive an object and quite another to represent it, as Piaget has pointed out. A child can recognize a circle long before he can draw it from imagination. In order to do so he must first be able to conjure up a mental image of the circle while it is out of sight. At first, his concepts of space are imitative and largely passive, then they become more and more active intellectually (1967, p. 37). In the experimental art classes, a drawing which simply copied a model subject received the lowest score of 1 point.

Restructuring a model subject however, does require thought. The child who drew the dog standing, for example, when the model was sitting down, had to reconstruct its appearance in imagination recalling, weighing possibilities, and making decisions. This kind of drawing was scored 3 points.

On the other hand, a child who transforms a model in his drawing seems to have responded to the model as an example of a class rather than as a particular object, and then substituted another example of the class that he thought more appropriate. Furthermore, in order to convey a message through his drawing, he must relate his subjects to one another and to the viewer, and he may relate himself to his subjects. This kind of drawing is often highly personal and imaginative as well as intellectually active and was given the highest score of 5 points.

### Results

Comparing pre-test and post-test scores of the 34 experimental children who attended the art classes, significant improvement was found at the .01 level in the combined abilities of selecting, combining, and representing. Control group children showed no improvement.

Comparing the experimental impaired children with the 60 normal children who were tested only once, the normal children were superior to the impaired children on the pre-test. On the post-test, however, the impaired experimental children were significantly superior to the normal children at the .05 level.

These findings suggest that art experience can be useful in developing and evaluating the ability to form concepts and to group on the basis of class or function.

### The Issues of Spontaneity and Arts Skills

To find out whether the children in the experimental group improved in expressiveness or skill, two judges were asked to evaluate 3 drawings or paintings by each of the 18 experimental children in the Fall Program; the first work, the last work, and one produced at mid-term. The works were numbered at random and presented at random to conceal the sequence in which they had been produced. One judge was Jane Field, ATR, who presented a paper here yesterday. The other judge was Dr. Mildred Fairchild, emeritus professor of Art at Teachers College, Columbia University.

The judges rated each picture on a scale of 1 to 5 points for art skills and sensitivities, and for the various levels of ability to represent: at the level of description (imitative, learned, impersonal), the level of restructuring (goes beyond description to elaborate or edit an experience) or the level of transformation (highly personal, imaginative, inventive). They judged on separate occasions and without previous consultation.

In both skill and expressiveness combined, both judges found improvements to a degree that was statistically significant at the .01 level. As rated by the therapist, the mean score for drawings produced in the first art period was 4.44 out of a possible 10 points. In the last art period, the mean score was 7.27 out of a possible 10 points. As rated by the university professor of art, the mean score for work produced in the first art period was 3.66; in the last period, 6.33. Although the therapist was a little more generous in her evaluations, their scores were very close, less than 1 point apart (values were 3.13 and 3.29).

These findings seem to indicate that therapeutic, aesthetic, and cognitive goals do not necessarily conflict. To the contrary, they seem to reinforce one another. And if this is true, we do not have to choose between them but can try to make the most of all three.

This is being attempted in the Master's Degree Program at the College of New Rochelle. In a class now in progress, 15 graduate students are using a technique described here as well as similar techniques. They are teaching, on a ond to one basis, children who have learning disabilities, hearing impairments, and/or emotional disturbances.

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## C. Statistical Analysis*

**1. Comparing impaired with unimpaired children in a suburban school system, no significant difference was found on the pre-test. On the post-test, however, the impaired experimental children were found significantly superior to the unimpaired children.**

On the pre-test, the unimpaired group was superior but not quite significantly better than the impaired group. Mean score for the 60 unimpaired children was 9.47. Mean score for the 68 impaired children (experimental and control groups combined) was 8.09, as indicated in Table I. (t=2.05) not significant.

On the post-test, the impaired experimental children who had attended the art classes, were significantly superior to the unimpaired children who had not attended the art classes and were tested only once. Mean score of the experimental group (N=34) was 11.47. T value was 3.31, significant at the .05 level with df = 92 (Two tailed test).

**2. Comparing scores of the impaired experimental children before and after the art programs (Fall and Spring Programs combined) significant improvement was found after the programs, at the .01 level, control group did not improve.**

Pre-test mean was 8.0; post-test mean, 11.47. T value was 3.62, significant at the .01 level with 33 degrees of freedom (two tailed test).

Control group pre-test mean was slightly higher, 8.18 (N = 16, Spring Program only). Control group post-test mean was 8.44).

**3. Comparing experimental and control groups in the Fall Programs, significant difference was found after the program in each of the three abilities under consideration (Selecting, Combining, and Representing).**

The 18 children in the experimental group performed significantly better than the 18 controls on the post-test.

In ability to select, the Experimental mean was 4.5; Control mean, 3.28. T value was 2.63, p less than .05 with df = 34 (two tailed test). Significant.

In ability to combine, the Experimental mean was 4.17; Control mean, 2.33. T value was 3.78, p less than .01 with df = 34 (two tailed test). Significant.

In ability to represent, the Experimental mean was 4.11; Control mean, 2.78. T value was 3.08, p less than .01 with df = 34 (two tailed test). Significant.

**4. Comparing experimental and control groups in the Spring Program, no significant difference was found when both schools for impaired children were combined. Significant difference was found, however, in one school, School A.**

During the Spring Program, the instructor became ill and was able to teach only 3 of the 9 art periods at School B, and 7 of the 9 periods at School A where she taught one day with an educational aide observing and assisting. Then the aide taught the second day of classes at School A as well as all groups at School B. Consequently, results at the two schools were analyzed twice. First, all data were analyzed at t test; second, only data from the instructor's groups were analyzed by t test.

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*Performed by John Kleinhaus, PhD. T-tests based on Hays, Statistics for Psychologists

In ability to select, both schools, the Experimental mean was 3.75; Control mean, 3.06. T value was 1.92, p greater than .05. Not significant.

In ability to select, School A, the Experimental mean was 4.25; Control mean, 2.87. T value was 2.29, p less than .05. Significant.

In ability to combine, both schools, the Experimental mean was 3.06; Control mean, 2.44. T value was 1.30, p greater than .05. Not significant.

In ability to combine, School A, the Experimental mean was 3.5; Control mean, 1.75. T value was 2.82, p greater than .05. Significant.

In ability to represent, both schools, the Experimental mean was 3.19; Control mean, 2.38. T value was 1.93, p greater than .05. Not significant.

In ability to represent, School A, the Experimental mean was 3.5; Control mean, 2.0. T value was 3.0, p less than .01. Significant.

The implications seem to be that the abilities measured by this test are independent of language impairment, and can be developed through a particular kind of art experience.

# 6. Using Art to Evaluate and Develop Cognitive Skills: Children with Communication Disorders and Children with Learning Disabilities*

Paper presented at the 1975 Annual Conference of the American Art Therapy Association, and subsequently received the Association's first research award

ERIC ED # 116 401, 1975

This paper is concerned with art procedures found useful in understanding and treating problems in cognition. The procedures were initially developed in a project for children with communication disorders (Silver, 1973), and later used in a study of children with learning disabilities. In both studies, children improved significantly in cognitive areas as measured by tests developed in the studies and tests adapted from experiments by Jean Piaget, Jerome Bruner, or their associates. Although these investigators were concerned with normal rather than handicapped children, and verbal rather than nonverbal communication, their observations about stages of cognitive development can be applied not only to what a child says but also to what he draws.

What I plan to do is describe the procedures, illustrating them with drawings by one of the children, a boy who will be called Burt, then summarize results. But first a word about the assumptions underlying the studies and the questions that were asked.

## Rationale

The first assumption is that thought can be separated from language. There is considerable evidence that language and thought develop independently, and even though language facilitates thought, high level thinking can and does proceed without it (Piaget, 1970; Arnheim, 1969).

In addition, language disorders are associated with damage to the left hemisphere of the brain while visual-motor disorders are associated with damage to the right hemisphere of the brain. The left seems specialized not only for language but also for analytical and sequential thinking while the right seems specialized not only for visual-motor skills but also for intuitive, simultaneous, and spatial thinking. The left is associated with concepts and intellect, science and mathematics, logic and history. The right is associated with art and metaphor, poetry and music, drama and dance.

Although left hemisphere thinking is usually valued more highly, art therapists, among others, know the power of nonverbal thinking and the importance of nonverbal communication in all our lives. The theme of this convention, "Concepts and Intuition: Friends or Foes", may suggest that we ought to choose between them, but I would like to add a word of caution. Concepts and intuition, left and right hemisphere thinking, seem to be two modes of consciousness, as Robert Ornstein has pointed out, and we need them both.

A second assumption, in the studies, is that concepts and intuition can be friends rather than foes, at least with brain damaged children. The children who participated had disorders which seemed to be associated with either one hemisphere of the brain or the other. In the initial project, they had language and hearing impairments. In the second study, they had the opposite constellation of strengths and weaknesses - verbal strengths and visual-motor weaknesses. In both studies, many had emotional problems as well.

One reason for this assumption is that new information and learned patterns are relayed widely throughout the brain.

> Large areas of the brain called association areas do not have direct connection with incoming sensory channels, but serve as integrating centers to which information may be relayed from several primary sources...
> I don't think it is too much to postulate that every experience that we have, and all of the training and conditioning which occur throughout the lifetime, result in the establishment of activation patterns through which our sensations are interpreted and related to associated information and to the appropriate related response (Masland, 1969, p. 94).

If so, it may be that art experience can serve to establish activation patterns for language to follow, or reinforce patterns set by language; and even though a child's capacity for language may be severely impaired, his capacity for symbolizing may be intact.

The art procedures were attempts to develop three areas of cognition that are said to be basic in mathematics as well as important in everyday life. The areas are first, the concept of a class or group of objects; second, concepts of space; and third, concepts of sequential order (Piaget, 1970, p. 24). These concepts are usually developed through language and associated with analytical thinking.

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The concept of a class or group of objects requires the ability to make appropriate selections, associate them with past experiences, and combine them into a context such as a sentence. Although selecting and combining have been identified as the two fundamental operations underlying verbal behavior (Jacobson, 1964, p. 25), they seem no less fundamental in the nonverbal thinking that underlies the visual arts. The painter, for example, selects and combines colors, lines, and shapes and if his work is representational, he selects and combines his subject matter as well.

Furthermore, art symbols, like language symbols, can stand for either a class of objects or particular individuals. The drawing or painting of a man can represent the painter's father, or authority figures in general, or man in the abstract, or all three; just as the word "man" can represent each or all of these ideas, depending on the verbal context.

The other two concepts under consideration - concepts of space and of order seem so obviously related to the visual arts that they need no elaboration here.

The question asked in the initial project was whether an experimental group of 34 children with language and hearing impairments could acquire these concepts through art experiences. Various procedures were devised to help the children discover the concepts themselves, and to guide their teachers in evaluating the level of thinking behind the drawings they produced.

## Burt

Burt, age 13, had many handicaps - receptive and expressive language impairments as well as severe hearing loss of 75 db in his better ear. His IQ was estimated at 43 (Stanford Binet).

Before the art program began, his classroom teacher evaluated his abilities and disabilities using a rating scale of 1 to 5 points (Table I). She gave him the lowest score, "almost never" for ability to select named objects or combine words into sentences. She also gave him the lowest score for ability to group objects on the basis of class, or associate new information with what he knows. She repeated the evaluation when the art program ended three months later, and again after six months at the end of the school year. His average score in these categories improved from 1 point to 3.2 points out of a possible 5. This was, of course, a subjective evaluation, and it is not claimed that art experience alone could take the credit for his gains, but they are mentioned because they seem to parallel his gains as measured by the project's prepost tests, as will be reported shortly.

Burt was present at 9 of the 11 art periods. In the first period, the children were shown an arrangement of four toy animals, asked to select the same animals from a pile and arrange them in the same way on their own sheets of paper. Burt selected 3 of the 4 animals, placed only 2 correctly in relation to one another, and placed none correctly in relation to the edges of his paper. This task was adapted from an experiment by Piaget and Inhelder, and Burt's response corresponded to their Stage II, typical of children younger than 7 who have not yet developed the ability to relate objects according to a system of reference (p. 428).

After this brief task, the children were free to draw or paint whatever they liked. Burt drew a faceless man with a knife in his stomach (Fig. 1), then stopped. I asked if he would like to give the man a face. He said no, then asked me how to draw a face. I started to demonstrate on the blackboard but this was not what he wanted. He asked me to draw his own likeness which I did. Burt then added the face to his drawing and proceeded with the house and car. When the period ended, he was so engrossed in drawing that his classroom teacher offered to let him stay on.

In the second art period, the children were shown a variety of drawings on 3x5" cards, spread out on two tables. On one table, the drawings represented people and large animals. On the other table, they represented objects and small animals. The children were asked to chose one or two cards from each table then draw pictures about them. They were also asked not to copy the model drawings but to draw the subjects they had chosen in their own individual ways.

Burt chose a boy from one table and a knife from the other but did not draw them. Instead, he drew airplanes dropping bombs on ships, buildings, and so forth (Fig. 2). He connected bombers and targets with scribbled or dotted lines, accompanying each strike with sound effects.

There is a difference between his two drawings in the way he related his subjects. Although both are fragmentary with a jumble of points of view, the subjects in his first drawing are related in the most elementary way, through proximity and distance. The man, for example, is larger then the car and the house. In his second drawing, his subjects are related with conventional symbols - dotted lines and scribbles, perhaps intended to be smoke.

In the third period, the children were introduced to painting with palettes, palette knives, brushes, and poster paint. The mixing of red and yellow into orange was demonstrated, black added to make brown, white added to

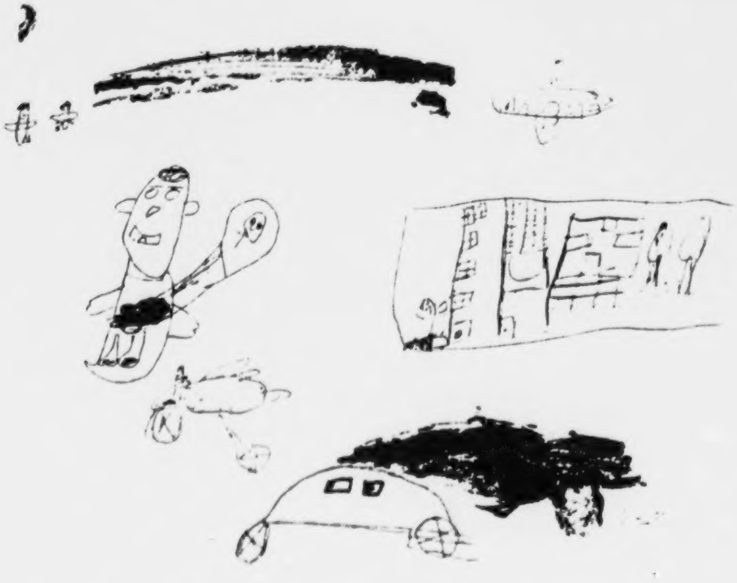

*Figure 1.* Burt's first art period.

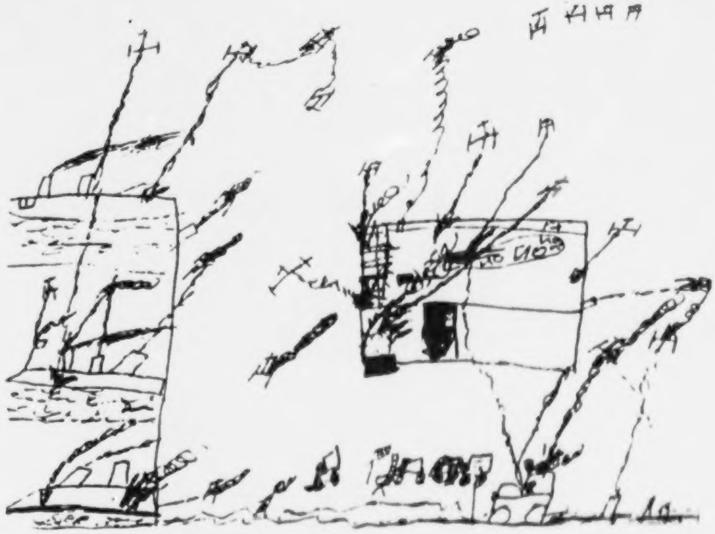

*Figure 2.* Burt's second art period.

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Drawings by another child have been eliminated to avoid redundency make tan. Then the children chose colors for themselves and experimented with mixing their own. Burt worked hard, but his hands trembled and his attempts to retrieve drops of color with the palette knife usually made matters worse. His frustration is reflected in the slashing strokes and scrubbing in a nonrepresentational painting (Figure 3).

Clay was introduced in the fourth period which started with a technique devised by Sonstroem to help normal children learn to conserve (Bruner, p. 208). The technique calls for two balls of clay of equal size, rolling one ball into a "hotdog" and back again into a ball. After each alternation, the children were asked to judge the amount of clay and explain their answers. The combination of labeling and manipulating enabled 8 of 10 normal children to recognize that appearance is not reality, that the amount of clay does not change with the change in shape.

Although language could play only a minimal role with Burt, he apparently learned to conserve. He was one of 11 children in the experimental group who were unable to conserve on the pretest. In the post-test, some months later, 4 of these children were able to conserve amounts of liquid, and Burt was among them. Some studies have found normal adults unable to conserve when presented with the same task.

Burt went on to model the clay and made a box with a slit on top - a bank. He was so delighted with it that he couldn't wait a week to let it dry, and brought it back to his classroom with him.

In the fifth art period, the model cards were again presented. Burt chose the sketch of a nurse showing only her head and shoulders. In this painting, he drew the nurse full-length combined with an object of his own invention - crutches (Fig. 4). This painting is organized in both form and content. There is no fragmentation. The forms relate to the paper as though its edges served as frames of reference, and the functional relationship between nurse and crutches suggests that Burt had a story in mind.

With time to spare, he painted Figure 5, using black paint and a few touches of red and blue. He began to talk about his painting, when he had finished, and I wrote his words on the blackboard. He copied them, spontaneously, on his painting, "No cars, no people, rain all over, can't walk, get a boat, swim."

The sixth art period was similar to the first, placing objects in given positions. Burt showed decided improvement over his performance in the first period, scoring 16 points out of a possible 18. He then painted a nonrepresentational design in flat color planes and dotted line. His hand no longer trembled, as it did in the third period, and there was no suggestion of frustration in the painting or in his classroom behavior.

The next three periods were spent drawing from observation and the last two periods were free for spontaneous drawing, painting, or modeling clay.

Burt's progress in drawing from observation is evident in Figure 6. The task was to draw an arrangement of three cylinders and a toy bug. In his first attempt, he missed the front-back relationships (a); in his second, he related the cylinders correctly but omitted the bug (b). In his third attempt, he was asked to change places with a classmate on the opposite side of the arrangement and the reversal apparently confused him. His left-right relationships are wrong and two cylinders appear above the table (c). These drawings suggest that Burt had reached Piaget's Stage II, typical of normal children ages 4 to 7.

Burt's last drawing, however, the landscape (d) is an accurate representation of the 7 toy objects presented to the children only one week later. Distances and proportions are correct as well as the left-right and front-back relationships between the objects. His only mistake was in drawing the two trees above the base plane. Since Burt's earlier mistakes had not been pointed out to him, his gains reflect his own corrections and observations.

This drawing suggests that he was at Stage III, typical of children age 9 to 11, or possibly Stage IV, typical of children his own chronological age, but there was no way to tell. Piaget's experiments had depended on verbal exchanges and abstract terms. Since verbal exchange with Burt was limited, Piaget's experiment with diagrammatic layouts could not be carried out (1967, p. 432).

In the ninth art period, the children were asked to draw the way water would look in the outline of bottles in various positions, and the way a house would look on the outline of a steep mountain slope. Next, they were invited to test out their predictions with bottles half-filled with water, plumb lines, and so forth. And finally, they were asked to paint pictures of people fishing with mountains nearby. It was hoped that art experience, following immediately, would provide opportunities to reflect on then new information and relate it to associated information during the process of painting imaginary pictures.

Burt's score on the pretest was 2 points out of a possible 5 in horizontal orientation, and 4 points in vertical orientation.

Burt explained his painting from imagination (Fig. 8) as follows: The house suspended above the landscape will not fall down. The baby fish is eating its mother. The red lines on her body are his bites. A boy sitting on the dock is watching. Another boy (behind the crosshatching) is in jail. They can't fish because the sign says no. Between them is a fish graveyard.

The various denials in this fantasy suggest that Burt had been pondering about gravity, imposing one's will versus following directions, and so forth. He seems to have

*Figure 3.* Burt's third art period.

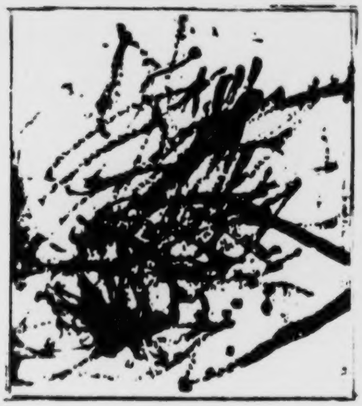


*Figure 4.* Nurse on crutches, (fifth period)

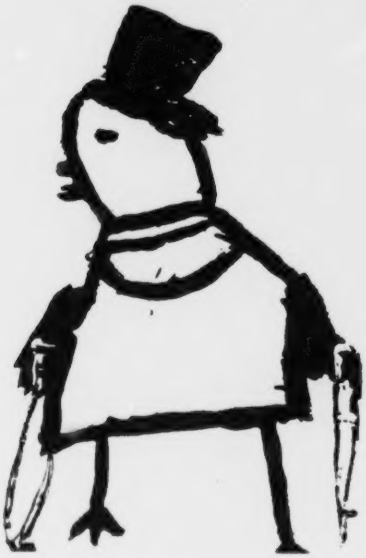
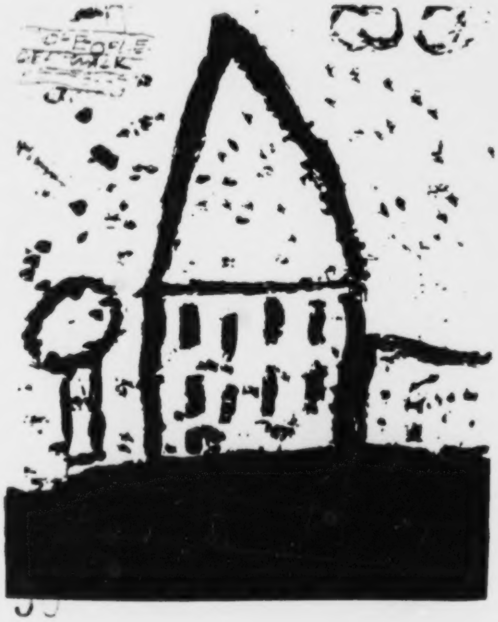


*Figure 5.* No cars, no people, rain all over,
can't walk, get a boat, swim, (fifth period)."



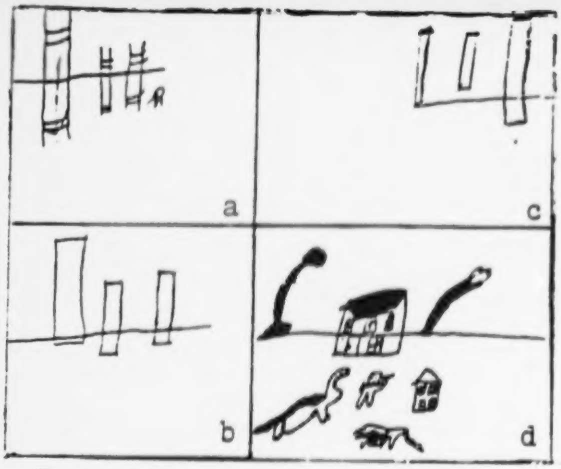


*Figure 6.* Burt's drawings from observation

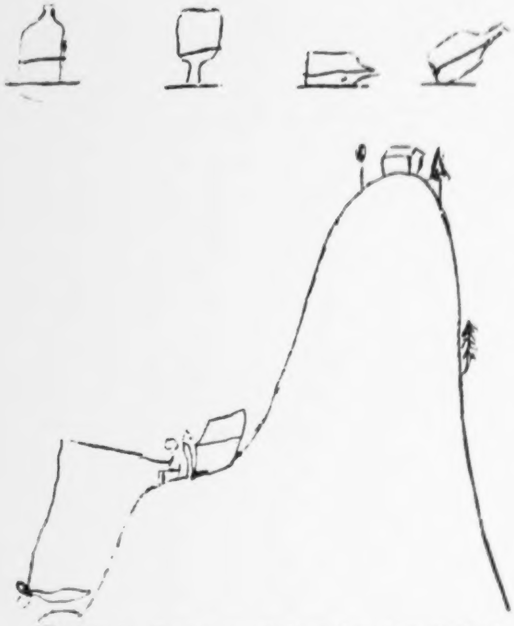


*Figure 7.* Burt's predictive drawing pretest

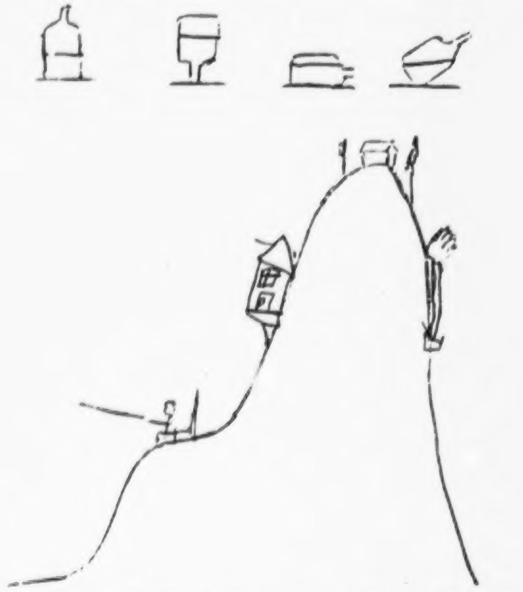


*Figure 9.* Burt's predictive drawing posttest

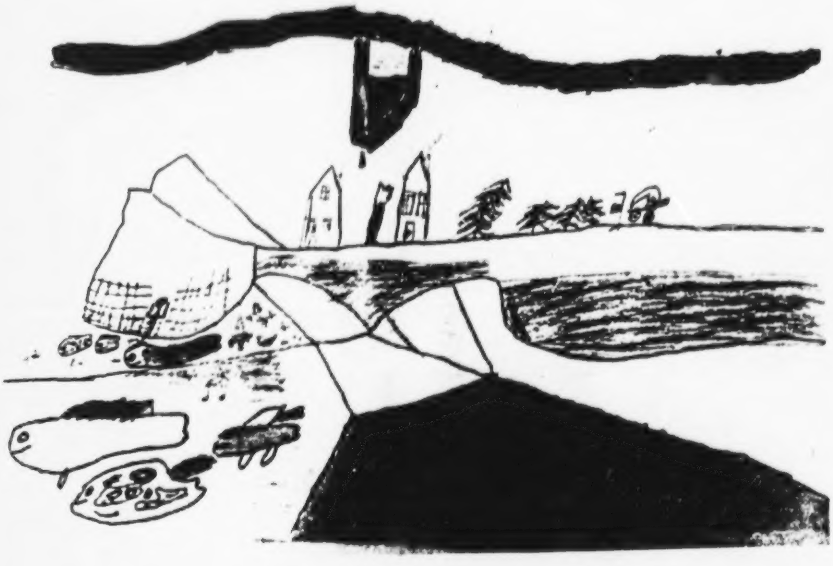


*Figure 8.* Burt's last painting from imagination

made use of art experience to obtain vicariously what cannot be obtained in reality and to express indirectly some angry feelings.

On the posttest, he received the highest score, 5 points in both horizontal and vertical orientation. Since studies have found college students who have not learned that water remains horizontal regardless of the tilt of its container. Burt seems to have done very well on his own.

There were fourteen pre-post test in the project. Burt's score on the pretests totaled 36 points; on the posttests, 66 points out of a possible 70. His mean score on the pretest was 2.57; on the posttest, 4.17 out of a possible 5 points, as indicated in Table II.

## Initial Project and Results

There were 18 children in Burt's experimental group. Eighteen other children, who did not attend the art classes, served as controls. They were a randomly selected 50% sample of all pupils in three classes in a school for children with language and hearing impairments. On the posttest, the difference between the groups in favor of the experimental group was found to be highly significant, at the $p<.001$ level, as measured by the 14 key items.

The most promising teaching and testing procedures were subsequently used in the second study.

## Second Study

The second study was concerned with two questions: would the procedures be useful with children who had learning disabilities rather than language and hearing impairments? and could the procedures be used effectively by art therapists or teachers other than the one who developed them?

Eleven graduate students, in the Master's degree program in Therapeutic Techniques in Art Education at the College of New Rochelle, worked under supervision with eleven children. The children were not selected but were enrolled as their applications were received following newspaper announcements that art classes were being offered to children with learning problems or other disabilities.

The classes were held on Saturday mornings, the children attending 10 one-hours periods. The graduate students attended 3 preliminary lectures, then each week for half an hour before the children arrived, reviewed teaching plans. They stayed on for another half hour after the children left to discuss the results. The first and last art periods were devoted to pretesting and posttesting while each intervening period was devoted to one of the tasks.

When the art program ended, six of the students scored the prepost test drawings, and the results were analyzed for reliability and for changes in cognitive development. In addition, after the program ended, a questionnaire was mailed to parents of the participating children, asking for anonymous opinions of the programs.

The findings indicate that the children improved significantly in the three areas of cognitive development that were the focus of the study, as measured by the project tests. Comparing scores of the 11 children before and after the art program, improvement was found at the $p<.01$ level in ability to select and combine, at the $p<.05$ level in spatial orientation, and at the $p<.01$ level in ability to order a matrix.

The reliability of the judges ratings of the test results was based on the scores of eleven tests. The obtained reliability coefficient was .852 for ability to associate or form groups, and .944 for spatial orientation, indicating that the six judges, based upon their training, had similar frames of reference and displayed a high degree of agreement in scoring the tests.

The findings seem to suggest that the art procedures developed in the two studies can be used to evaluate and develop cognitive skills of children with communication disorders and children with learning disabilities. They also suggest that the procedures can be used effectively by art therapists and art teachers.

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**Burt's Performance on Project Tests**

|  |  | PRE-TEST<br>October | POST-TEST<br>January | CHANGES |
|---|---|---|---|---|
| Cognitive Skills |  |  |  |  |
| 1. | Conserving Liquid | 0 | 5 | +5 |
| 2. | Conserving Solids | 0 | 5 | +5 |
| 3. | Conserving Numbers | 5 | 5 | 0 |
| 4. | Ordering a Series | 5 | 5 | 0 |
| 5. | Ordering a Matrix | 3 | 5 | +2 |
| 6. | Ordering Colors | 1 | 5 | +4 |
| 7. | Placing Objects in Given Positions | 3 | 5 | +2 |
| 8. | Horizontal Orientation | 3 | 5 | +2 |
| 9. | Vertical Orientation | 5 | 5 | 0 |
| 10. | Grouping 3 objects | 3 | 3 | 0 |
| 11. | Grouping from an array | 5 | 3 | - 2 |
| 12. | Selecting | 1 | 5 | +4 |
| 13. | Combining | 1 | 5 | +4 |
| 14. | Representing | 1 | 5 | +4 |
|  | mean | 2.57 | 4.71 | 2.17 |

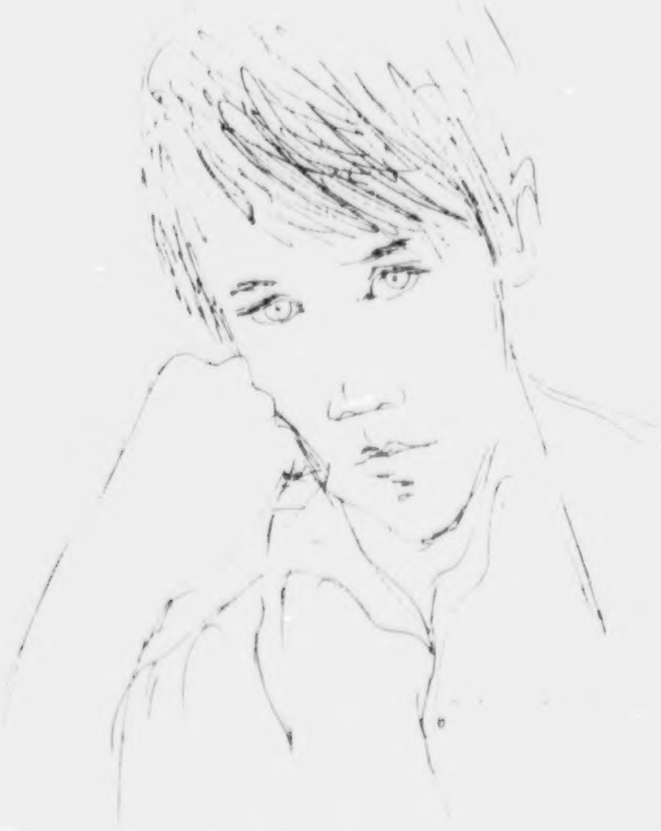
## Teacher Evaluation of Burt's Abilities Before and After the Art Program

Rated on the basis of 1 to 5 points: 1 = almost never,
2 = on rare occasions, 3 = sometimes, 4 = fairly often,
5 = very often.

| | IS (S)HE ABLE TO: | OCTOBER | JANUARY | JUNE | CHANGE |
|---|---|---|---|---|---|
| 1. | Select named objects | 1 | 4 | 4 | +3 |
| 2. | Comprehend words and phrases | 4 | 4 | 4 | 0 |
| 3. | Follow instructions | 4 | 4 | 4 | 0 |
| 4. | Find the right word | 4 | 1 | 2 | - 2 |
| 5. | Use nouns, synonyms, antonyms | 2 | 1 | 3 | +1 |
| 6. | Combine words into sentences | 1 | 1 | 3 | +2 |
| 7. | Use connective words, pronouns, adjective, adverbs | 3 | 1 | 2 | - 1 |
| 8. | Sequence events, tell stories | 4 | 3 | 3 | - 1 |
| 9. | Explain his thoughts or ideas | 4 | 2 | 3 | - 1 |
| 10. | Discuss hypothetical questions | 2 | 2 | 1 | - 1 |
| | IN NON-VERBAL ACTIVITIES, DOES (S)HE: | | | | |
| 11. | Detect similarities between objects | 3 | 3 | 3 | 0 |
| 12. | Group objects on the basis of invisible attributes, such as clear or function | 1 | 2 | 2 | +1 |
| 13. | Put objects in sequence such as size or weight | 3 | 3 | 3 | 0 |
| 14. | Recognize that appearances may be deceiving (knows that spreading out a row of pebbles does not increase the number, for example) | 1 | 3 | 2 | +1 |
| 15. | Associate new information with what he knows, incorporate and make use of it | 1 | 4 | 3 | +2 |
| 16. | Concentrate for more than 5 min. | 3 | 3 | 4 | +1 |
| 17. | Retain information and carry a task through to completion | 3 | 1 | 2 | - 1 |
| 18. | Solve problems | 1 | 1 | 2 | +1 |
| 19. | Engage in imaginary play | 5 | 4 | 2 | - 3 |
| 20. | Originate ideas or forms | 1 | 2 | 2 | +1 |
| | DOES (S)HE TEND TO: | | | | |
| 21. | Work independently without asking for help or direction | 1 | 1 | 3 | +2 |
| 22. | Control emotions (does not cry easily or hit, shove, fight) | 2 | 1 | 4 | +2 |
| 23. | Tolerate frustration | 4 | 2 | 3 | - 1 |
| 24. | Join readily in group activities | 4 | 5 | 4 | 0 |
| 25. | Cooperate with adults | 4 | 5 | 4 | 0 |
| 26. | Cooperate with other children | 3 | 3 | 3 | 0 |
| 27. | Be interested in learning language | 4 | 2 | 3 | - 1 |
| 28. | Be interested in learning generally | 4 | 2 | 3 | - 1 |
| 29. | Have a sense of humor | 5 | 2 | 2 | - 3 |
| 30. | Have self-confidence & self-esteem | 3 | 2 | 3 | 0 |

## Postscript 6

In these art classes, I often joined my students in painting or sketching. Here is sketch of Burt.



## 7. Objectives and Methods of Teaching Art to Deaf Students

*Viewpoints: Dialogue in art education*, Vol. 3, No. 1, 1976

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Does an art teacher need special skills to teach deaf children or adults? Should one learn sign language, for example, or expect less from handicapped students than from the so-called normal? My experience suggests the answer is no. The similarities between deaf, brain injured, emotionally disturbed, and typical children, or adults, seem far greater than the differences among them, and one's approach to teaching can remain the same. One need only shift the emphasis to meet individual needs.

Before considering methods of such teaching, it is useful to be clear about the intentions behind them. Is it our aim to teach students HOW TO draw or paint or model clay? From my point of view, art techniques are means to other ends rather than ends in themselves, and thus we can set our sights beyond them.

I would like to suggest four goals in teaching art to *any* students. The first is the obvious goal of aesthetic merit and sensitivity to art values. This needs no elaboration here.

A second goal is to widen the range of communication, providing students with additional channels for expressing thoughts and feelings, and providing teachers with information about abilities or disabilities that might otherwise be unavailable. In other words, the goal is to elicit rather than instruct, draw out rather than put in, to help students give form to their own experiences rather than follow directions, to show students HOW TO draw or paint to enable them to say well what they want to say.

If this goal is worthwhile, how may it be achieved? One way is to provide open-ended tasks, those with many possible solutions rather than those that call for a single solution known to you in advance. On the other hand, it is sometimes useful to set specific tasks, but even so, students can be free to make important decisions themselves. With this approach to teaching, variety of style and interpretation is encouraged even when the subject matter is the same. Some children tend to use poster paints in thin washes as though they were water colors while others use them thickly as though they were oils. Some like broad brushes while others prefer fine points. Such preferences as these should be respected. Even young children should be encouraged to follow the ways that seem natural to them rather than follow popular conventions or a teacher's personal preferences.

This is not to suggest that freedom is itself the goal. Freedom in education is "the run before the jump," as Martin Buber once wrote, "without it nothing succeeds but neither does anything succeed by means of it." Independence is a "foot-bridge not a dwelling-place."[1]

The third goal is to provide for learning experiences at the other end of the footbridge, exploratory learning rather than the passive reception of information, visual and spatial thinking rather than verbal-analytical thinking. These can be implemented by following new information with time for experimenting with tools and techniques. Quiet reflection and the pleasure of overcoming obstacles frequently help students find answers to problems by themselves. Once a student is absorbed in work, protect him or her from interruptions, but intervene when frustration seems near at hand, as when a child is struggling with a brush that is too small or too large, too wet or too dry.

The fourth goal is to reinforce emotional balance, not by using art as a psychological tool but by providing opportunities that art teachers in particular are able to offer. Art experience can be healing in itself when the classroom atmosphere is one of approval and support, and when there are opportunities to work from imagination. Then students can fulfill wishes vicariously and express anger or fear indirectly in pictorial symbols.

For students who have hearing impairments or language disorder, teachers can shift emphasis to the second goal suggested here—communication, emphasizing content rather than form, meanings rather than elements of design, narrative or representational subject matter rather than abstractions.

Another area of emphasis would be demonstration rather than talk. Art techniques lend themselves to pantomime. Even with "normal" students, it is often easier to show a technique than describe it. Verbal communication can often be avoided by sketching on the blackboard or scrap paper. It is possible to convey abstract ideas by acting out alternatives, such as standing close to a painting, looking at it as though puzzled, then stepping back a few paces and coming up with an idea.

Drawing and painting can provide diagnostic information about ability to perceive and represent, or the level of various other cognitive skills. In addition, they can provide opportunities for remediation. For example, art procedures were developed in a project for children with language and hearing impairments in an attempt to improve three areas of cognition said to be basic in mathematics as well as everyday life—concepts of a class or group of objects, concepts of space, and concepts of sequential order. The same procedures were used later in studies of children with learning disabilities and with adult stroke patients.[2] Significant gains were found. These were measured by various drawing tests developed in the studies and tests adapted from experiments by Jean Piaget[3], Jerome Bruner[4], or their associates. Although these investigators concerned themselves with normal rather than handicapped children, and verbal rather than nonverbal communication, their observations about stages of cognitive development prove applicable not only to what a child says but also to what he draws.

To summarize, it is suggested that objectives and methods of teaching art can be the same for all students, handicapped or otherwise, providing the teacher is flexible and emphasizes appropriate procedures to meet the special needs of students.

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[1] Martin Buber, *Between Man and Man*, Beacon Press, Boston, 1961, p. 91.

[2] The first study is described in *American Journal of Art Therapy*, Vol 14, No. 2, January, 1975: "Children with Communication Disorders, Cognitive and Artistic Development." It is described also in N.Y. State Urban Education Project Report #147232101, 1973, ERIC Ed #084 745, Rawley A. Silver.

The second study is described in a presentation at the 1975 American Art Therapy Association Convention, to be published by the Association. The third study is described in Vol 15 #1, in press, *American Journal of Art Therapy*

[3] Piaget, Jean and Barbel Inhelder, *The Child's Conception of Space*, W.W. Norton and Co., New York 1967.

[4] Bruner, Jerome S. et al, *Studies in Cognitive Growth*, John Wiley and Sons, New York, 1966.

# 8. The Question of Imagination, Originality, and Abstract Thinking by Deaf Children

*American Annals of the Deaf*, , Volume 122 (3), 1977

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**Deaf children do not lag behind hearing children when nonverbal instruments are used to assess imagination, originality, and abstract thinking. The nonverbal instruments used in the studies described here included drawings and paintings produced in experimental art classes. As measured by the Torrance Test of Creative Thinking and rating scale evaluations by panels of teachers and other educational specialists, deaf populations equalled hearing populations and often excelled. Art procedures served not only for assessing abilities but also for remediation to develop concepts of space, class, and sequential order. Tasks were adapted from experiments by Jean Piaget or Jerome S. Bruner and their associates, and served as pretests and posttests. Statistical analysis found significant gains in cognitive skills as well as creative skills.**

A recent study suggests that deaf children lag behind hearing children in abstract thinking, originality and imaginary play. In the study, 20 deaf children were asked to make up stories and answer questions about their dreams, fantasies, and play. Their answers were found to be unimaginative and concrete, even less rich in fantasy than the answers of hearing children three to five years younger. "None mentioned any games such as . . . cops and robbers. . . For the most part, the fantasies . . . related experiences they had actually encountered rather than some they wished to encounter. . . All suggest greater concreteness and lack of originality than shown in responses by their normal peers" (Singer and Lenahan, 1976, p. 47).

These findings were based on *verbal* responses. To generalize from them would be a serious error, for deaf children do *not* in fact lag behind when we bypass verbal expression and use nonverbal instruments to assess these capacities. Evidence supporting this claim may be found in three studies. Since the studies have been reported elsewhere, they will be summarized here.

## STUDY I: A DEMONSTRATION PROJECT IN ART EDUCATION FOR DEAF AND HARD OF HEARING CHILDREN AND ADULTS

The objectives of this study included assessing aptitudes such as originality, and vocational opportunities in the visual arts. A group of 54 deaf and hard of hearing children and adults attended experimental art classes. They were not selected but were enrolled as their applications were received following newspaper and other announcements. The Torrance Test of Creative Thinking and three rating scales were the instruments used to assess their aptitudes (Silver, 1967).

### Comparison of deaf and hearing subjects as measured by Torrance Test of Creative Thinking

This test is a measure of creativity in general rather than creativity in art alone. Its nonverbal form, Figural Form A, was administered to 12 students in the experimental art classes. Their average scores (as compared with hearing populations) were:

| | |
|---|---|
| ORIGINALITY | 99th percentile |
| FLUENCY | 97th percentile |
| FLEXIBILITY | 88th percentile |
| ELABORATION | 99th percentile |

Eight of the 12 students had composite scores which placed them in the 99th percentile.

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### Comparison of paintings by 22 deaf and 22 hearing art students as judged by three university professors of art

The judges were asked to evaluate 44 unidentified paintings. The 22 deaf painters were children and adults in the first term of the project art classes. The 22 hearing painters attended art classes either in public elementary and secondary schools or an adult art education class in a public high school. Their paintings were rated on a scale of 1 to 5 points for each of the qualities of originality, sensitivity, and expressiveness. The average scores of the deaf children and adults were slightly higher than the scores of their hearing counterparts, while the scores of the deaf teenagers were slightly lower. In the category of originality alone, average scores were as follows:

| | |
|---|---|
| 8 Hearing Children | 1.96 |
| 8 Deaf Children | 2.41 |
| 7 Hearing Adults | 2.67 |
| 7 Deaf Adults | 3.10 |
| 7 Hearing Teenagers | 3.00 |
| 7 Deaf Teenagers | 2.76 |

### Comparison of originality in portfolios of artwork by 16 deaf students with the work of hearing art students as judged by 13 art educators

The judges were asked to compare the portfolios with the work of their own students. They did not know the purpose of the study and were not told that the students were deaf. In the category of originality alone, the average scores of the deaf, compared with the average of 3 points for the hearing, were as follows: deaf children: 3.74; deaf teenagers and adults: 3.40.

The combined average score for the deaf in all three categories (originality, sensitivity, and expressiveness) was slightly above the average for the hearing in spite of a decided disadvantage in that six deaf teenagers were compared with hearing art students in colleges and art schools at the graduate level.

### Comparison of deaf and hearing art students by 11 teacher-observers

The judges included: 3 art teachers who taught only hearing students, 4 teachers who taught both academic subjects and art and had experience with both hearing and deaf students, 2 art teachers who had taught both deaf and hearing students, and 2 teachers of academic subjects who had experience with deaf students exclusively.

After observing the experimental art classes, the judges rated the students for originality, independence, sensitivity, expressiveness and interest in art. Nine of the 11 judges found the deaf equal or superior to the hearing in *each* category. The only judges who found the deaf inferior were the two teachers who worked with deaf students exclusively.

Here are some of the drawings and paintings produced in this study. It should be noted that the deaf students were not asked questions and their teacher did not suggest topics. They were encouraged to draw or paint spontaneously, and left free in their pictorial efforts.

Figure 1, painted by a deaf child, age 12, shows a dragon about to eat a little man trapped on a tree calling, "help"! This painting and some of the other illustrations are from an exhibition catalogue (Silver, 1976-b).

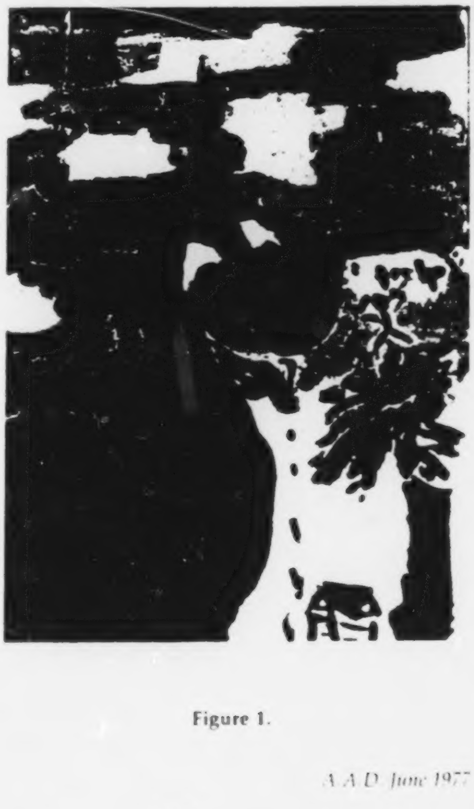

Figure 1.

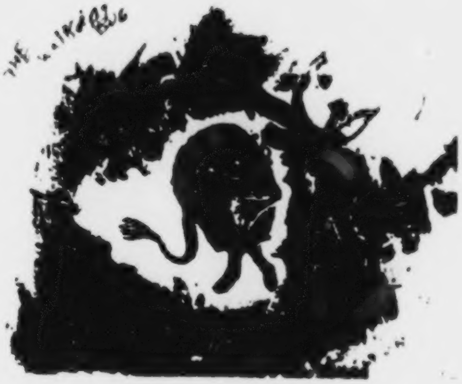

Figure 2.

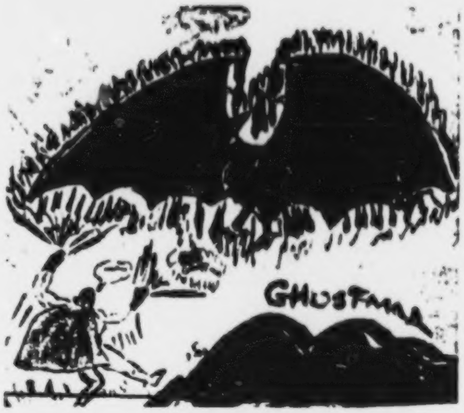

Figure 3.

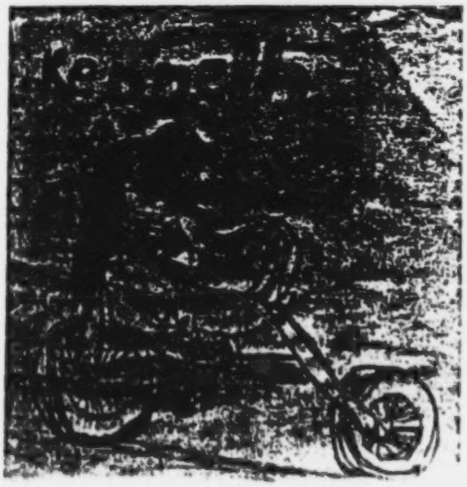

Figure 4.

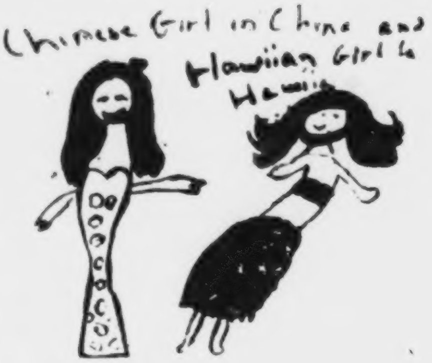
Chinese Girl in China and
Hawiian Girl in
Hawaii

Figure 5.

Figures 2 and 3, by another deaf child, age 12, show a rather human "Walking Bug" and "Ghostman" confronting a large kind of bat. These are hardly "experiences they had actually encountered". Again, contradicting the findings of the Singer-Lenahan study, here is a drawing of an experience quite possibly wished for—Kenneth himself on a motorcycle with a beautiful girl behind him (Fig 4). Actually, Kenneth, age 15, had cerebral palsy as well as language and hearing impairments and was quite small for his age.

Figure 5, by a 9-year old, entitled, "Chinese Girl in China and Hawaiian Girl in Hawaii", indicates that he notices differences within similarities and vice versa, characteristics of abstract thinking.

## STUDY II. THE ROLE OF ART IN THE CONCEPTUAL THINKING, ADJUSTMENT, AND APTITUDES OF DEAF AND APHASIC CHILDREN

This project had several goals: among them, to determine whether art education can provide a means of assessing and stimulating conceptual thinking and creative aptitudes. Experimental art classes were provided in four schools for deaf children. Twenty-five children, ages 8-17, were selected by administrators of their schools. The drawings and paintings produced in the classes were evaluated by two panels of judges (Silver, 1966).

### Evaluations by a panel of 20 education specialists

The judges included psychologists, psychiatrists, school administrators, educators of chil-

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dren who were either deaf, learning impaired, or unimpaired, and university professors of special education. They were asked if they found evidence that art afforded opportunities for various kinds of cognition, and evidence that would be useful in assessing various abilities and needs. Of 337 answers, 315 were yes, 8 were no, and 14 were qualified. Relevant categories are summarized as follows:

Table 1

| | yes | no | other |
|---|---|---|---|
| Evidence of opportunities to: | | | |
| IMAGINE | 19 | 0 | 1 |
| GENERALIZE | 18 | 0 | 2 |
| ASSOCIATE | 20 | 0 | 0 |
| Evidence useful in assessing: | | | |
| ABILITY TO THINK ABSTRACTLY | 19 | 0 | 1 |
| ABILITY TO THINK INDEPENDENTLY | 20 | 0 | 0 |

**Evaluations by a panel of 20 art educators**

The judges taught in elementary and secondary schools, colleges and graduate programs. They were asked if they found evidence of story-telling as well as ten other categories of art qualities. Of 260 answers, 93% were affirmative. All 20 judges found evidence of story-telling.

Here are some of the drawings and paintings evaluated by *both* panels of judges. As in the preceding study, subject matter was not suggested by the teacher. It originated with the children who produced them.

Figure 6 is a cops-and-robber fantasy with cops chasing robbers from a helicopter. It was the work of a 12-year old deaf boy who included words with his drawing, "It was stollen car/the helicopter shoot car pop". Using language alone, could he have told his story effectively? Without the information provided by his drawing, would we find him unimaginative and concrete?

Figure 7 seems to be an out-of-ordinary fantasy with the victim being shot and thrown overboard at the same time.

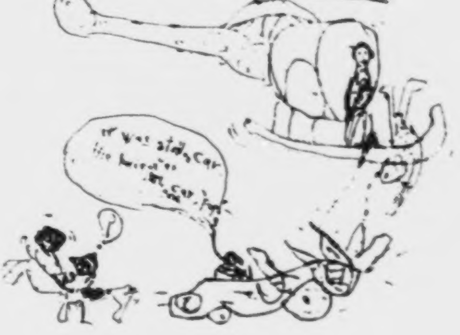

Figure 6.

## STUDY III. COGNITIVE SKILLS DEVELOPMENT THROUGH ART EXPERIENCES

In this study, the art procedures focused on the development of three concepts: the concept of a class or group of objects, concepts of space, and concepts of sequential order. Eighteen students, ages 8 to 15, attended the experimental art classes in the School for Language and Hearing Impaired Children in New York City (Silver, 1973).

Cognitive skills were measured by pre-post tasks adapted from experiments by Jean Piaget or Jerome S. Bruner and their associates who traced the development of cognition in unimpaired children. Statistical analysis of 14 key tems of the posttest found a difference between experimental and control groups at the $p < .01$ level in favor of the experimental group. These items included measures of ability to conserve, order sequentially, form groups, and predict spatial relationships.

Although the main question was whether art could take the place of language in developing these concepts, it was also asked whether there would be gains in imagination and artistic merit, or whether there would be losses as a result of emphasizing cognitive skills in an art class.

Three drawings by each child in the first term art class were evaluated, the first, the last, and a drawing produced at mid-term. The drawings were identified only by number and shown in random order. The judges, an art therapist and a university professor of art, worked independently.

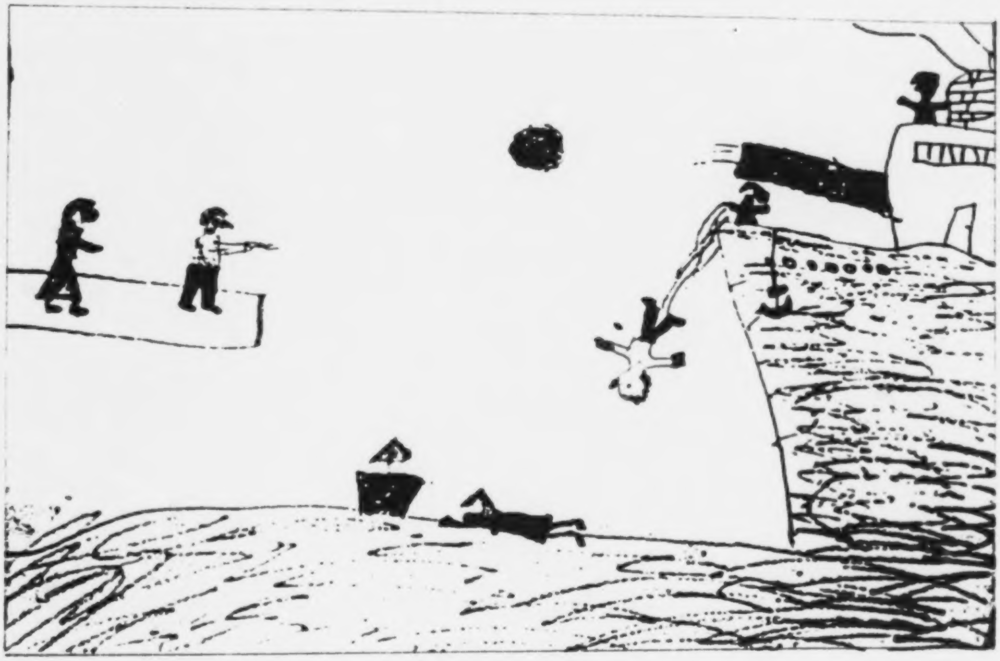

Figure 7.

Of the 18 children, 11 showed gains. With 6 of these children, first drawings received the lowest score, 1 point, for being imitative and impersonal, while their last drawings received the highest score, 5 points, for being highly personal and imaginative. Both judges found improvements significant at the $p < .01$ level in six test items of skill and expressiveness combined. Here are examples of artwork produced in this study and which seem to contradict the findings of the Singer-Lenahan study.

Figure 8, by Jane, age 12, shows a girl in the water crying, "help! help!". The boy answers, "OK!", as he swims to the rescue. Meanwhile, on the beach, other people are having a picnic. In her next drawing, Figure 9, the boy is saying, "I love you" while the girl replies, "Oh thank you". Figure 10, a fantasy about money, needs no elaboration.

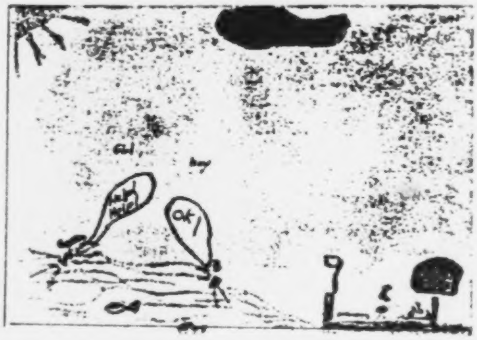

Figure 8.

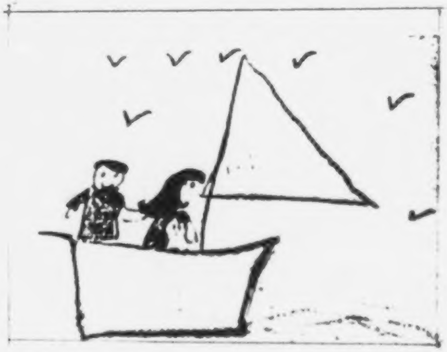

Figure 9.

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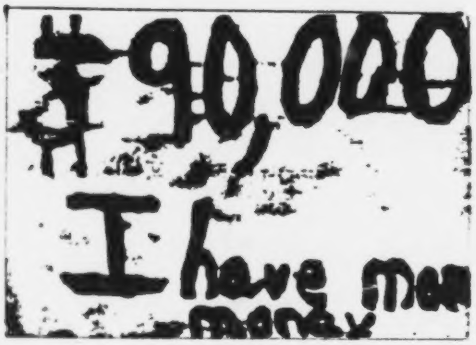

**Figure 10.**

### OBSERVATIONS

It is often said that the deaf child lacks imagination. It may be more accurate to say that he lacks opportunities to put his imagination to work. When a child does not, or cannot, talk about imaginary experiences, he may spontaneously engage in imaginary play while drawing, as did the children whose drawings were shown here. This is not suggesting that art classes for deaf children should always be unstructured. They were highly structured in the third study summarized, but whenever possible, the tasks were open-ended, with many possible correct solutions, and final decisions were made by the children themselves. When the tasks could not be open-ended, as in drawing from observation, they were kept brief and followed by time for quiet reflection while drawing or painting as they wished. These teaching and testing procedures are also described in Silver (1975, 1976-a).

Educators of deaf children often look for new ways to stimulate imagination but they usually have in mind verbal stimuli and they usually overlook art. To the extent that art experience can enable deaf children to engage in imaginary play, and possibly sustain or prolong it, it can provide opportunities for abstract thinking as well as reinforce patterns set by language and set patterns for language to follow.

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# 9. Comparing *SDT* Scores of Hearing-Impaired, Hearing, and Learning Disabled Girls and Boys

*Silver DrawingTest of Cognition and Emotion,* 1996

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It is often assumed that deaf children lag behind children with normal hearing in cognitive abilities, and that females lag behind males in spatial abilities. It has even been claimed that male superiority in spatial thinking has been confirmed and is not even in dispute (Moir & Jessel, 1992).

The *SDT* was designed initially to tap the cognitive abilities of children like Charlie, as discussed in Chapter 1. It was theorized that children with language- and hearing impairments would equal unimpaired children in spatial skills, but fall behind in sequential and verbal skills.

To test these theories, responses to the *SDT* by 27 deaf and 28 hearing children, ages 9 to 11, were examined and their test performances compared.

**Procedures**

The hearing-impaired subjects included 13 girls and 14 boys in an urban non-residential school for deaf children in New York. They included all the children in the fourth grade who had responded to the *SDT* as part of the National Institute of Education project discussed in the previous chapter. Their scores on the *WISC* Performance Scale ranged between 72 and 130. One girl and one boy were severely impaired with multiple handicaps; another boy was "language disordered."

TABLE 1 *Comparing Scores of Deaf and Hearing Children in Ability to Predict and Represent Verticality.*

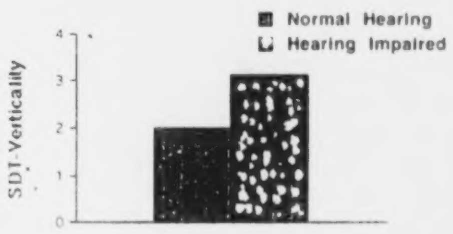
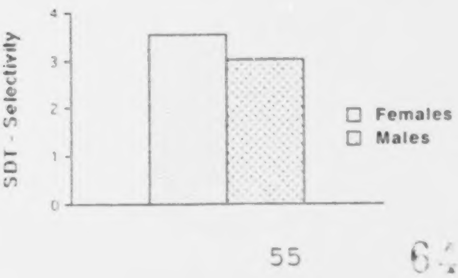


Table 2 *Comparing Scores of Girls and Boys in Ability to Select.*



The hearing subjects included 14 girls and 14 boys attending two public elementary schools. They were matched in age and selected at random from responses to the *SDT* administered by a classroom teacher in New Jersey and an art therapist in Pennsylvania, and scored by teachers or art therapists.

## Results

**Predictive Drawing.** No significant differences were found between deaf and hearing children, or between girls and boys, in horizontal orientation or in ability to sequence. The deaf children received significantly higher scores than the hearing children in vertical orientation ($F(1,51)=14.34, p<.001$). Mean scores were 3.13 and 2.00 respectively, as shown in Table 18.

**Drawing from Observation.** No significant differences were found between deaf and hearing children, or between genders, in representing Left-right, Above-below, or Front-back relationships.

**Drawing from Imagination.** The girls received higher scores than the boys in ability to select (3.54 vs 3.04) to a degree significant at the .05 level ($F(1,51)=5.49$, $p < .05$). No other gender differences were found. This finding is shown in Table 19.

The hearing children received higher scores than the deaf children in ability to select ($F(1,51)=12.85$, $p <,001$, ability to combine ($F(1,51)=57.66$, $p <.000001$), and ability to represent ($F(1,51)=30.99$, $p < .000001$). The means were 3.68 vs 2.90 for selecting, 3.93 vs. 1.98 for combining, and 3.89 vs. 2.27 for representing. This finding is shown in Table 20.

## Observations

It was surprising to find the deaf children superior in Vertical orientation. Only four of the 55 children drew vertical houses, and three of the four were deaf. This suggests they had somehow discovered that houses remain vertical when cantilevered or supported by posts, a discovery that seems to call for visuo-spatial thinking.

No significant differences were found in the four remaining spatial abilities. This finding supports the theory that hearing-impaired children can be expected to equal hearing children in visuo-spatial abilities, as measured by the *SDT*. The results also have support in a study by Craig and Gordon (1989) who found the cognitive task performance of deaf high school students above average for the visual and spatial skills measured by the Cognitive Laterality Battery (Gordon, 1986), but below average for sequential skills. In the present study, however, the

The significantly lower scores of deaf children in Drawing from Imagination suggest that selecting images and combining them into drawings does not parallel the mental operations of selecting words and combining them into sentences. It may be that these mental operations cannot be separated from language skills. On the other hand, it may be that the deaf children lagged behind because they had less experience in selecting, combining, and representing because of language deficiences. If so, additional experiences in drawing from imagination may lead to improvements that transfer to language skills.

Pollio and Pollio (1991) suggest that assessment should be tied to intervention. Educators of deaf children may find useful the intervention techniques for developing cognitive skills in Chapter 7.

It was also surprising to find no significant gender differences in spatial abilities because of many reports of male superiority in the Piagetian task of liquid horizontality. In addition, the girls received significantly higher scores than the boys in ability to select.

The findings of this study support the theory that the *SDT* can be effective in assessing gender differences and similarities as well as cognitive strengths and weaknesses of hearing-impaired children.

### Comparing *SDT* Scores of Learning Disabled, Deaf, and Unimpaired Girls and Boys

This study extended the previous study by adding a sample of 28 learning disabled children (manuscript submitted for publication). The data were analyzed by using ANOVA and LSD tests to determine which groups differed on which measures.

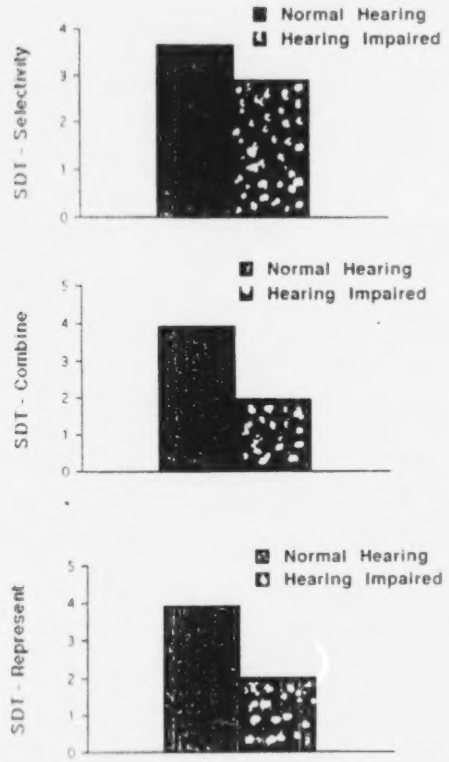
The deaf children scored higher in Vertical orientation than either the learning disabled or unimpaired children at the .05 level of probability. No significant differences were found in Sequencing or Horizontality.

The unimpaired children and deaf children scored higher than learning disabled children in representing Left-right relationships. In representing Above-below relationships, the unimpaired children scored higher than the learning-disabled children and no significant differences were found in representing Front-back relationships.

The unimpaired children scored higher than either hearing-impaired or learning-disabled children in ability to Select, Combine, and Represent. The girls scored higher than the boys in Selecting and in Combining whereas the boys had no significantly higher scores.

These findings amplify the evidence found in the previous study and support the theory that the *SDT* can be effective in assessing and comparing the cognitive strengths and weaknesses of hearing-impaired, learning disabled, and unimpaired girls and boys.

*Comparing Scores of Deaf and Hearing Children in Ability to Select, Ability to Combine, and Ability to Represent.*



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## Summaries

### Studies of Hearing Impairments and Language Disorders

### 1. The Role of Art in the Cognition, Adjustment, Transfer, and Aptitudes of Deaf Children,

*Proceedings of the Conference on Art for the Deaf*, (Ed) Claire Deussen,
Los Angeles: Junior Arts Center, 1971

Although this publication was too long for reprinting, It included a pilot outcome study that held promise for future research. Consequently, the study is summarized below, and only itsTables reprinted.

The study asked if changes occurred in the cognitive and social behavior of 14 deaf children after they participated in experimental art classes during the 1970-1971 school year. Eight behaviors were considered, among them, abstract thinking, recall, aggressiveness, and motivation. Two children in Group A, Keith and Sam, participated in 22 weekly art classes; the other four children, in only the first five art classes. The 8 children in Group B attended weekly art classes for approximately 11 weeks.

**TABLE I: CHANGES IN BEHAVIOR, GROUP A**

*(A score close to 1 would indicate that the child almost never has difficulty, whereas a score close to 5 would mean that he has difficulty very often.)*

| | Cognitive Behavior | | | | | Emotional Behavior | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | A<br>*Fix At.* | B<br>*Recall* | C<br>*Assoc.* | D<br>*Ab.Th.* | *Av Sc.* | E<br>*Motiv.* | F<br>*Aggres.* | G<br>*Shy* | H<br>*Reas.* | *Av. Sc.* |
| Keith | | | | | | | | | | |
| 11/24/70 | 2 | 3 | 3 | 2 | 2½ | 2 | 3 | 1 | 2 | 2 |
| 4/22/71 | 1 | 1 | 1 | 2 | 1¼ | 1 | 1 | 1 | 2 | 1½ |
| Sam | | | | | | | | | | |
| 11/24/70 | 2 | 3 | 2 | 3 | 2½ | 1 | 2 | 1 | 2 | 1½ |
| 4/22/71 | 1 | 1 | 1 | 3 | 1½ | 1 | 1 | 1 | 3 | 1½ |
| Lena | | | | | | | | | | |
| 11/24/70 | 5 | 4 | 4 | 3 | 4 | 5 | 3 | 1 | 5 | 3½ |
| 4/22/71 | 5 | 5 | 5 | 5 | 5 | 4 | 1 | 1 | 5 | 2¾ |
| Martin | | | | | | | | | | |
| 11/24/70 | 4 | 5 | 5 | 2 | 4 | 3 | 2 | 1 | 4 | 2½ |
| 4/22/71 | 5 | 5 | 5 | 5 | 5 | 4 | 1 | 1 | 5 | 2¾ |
| Harriet | | | | | | | | | | |
| 11/24/70 | 3 | 2 | 3 | 2 | 2½ | 3 | 4 | 1 | 4 | 3 |
| 4/22/71 | 3 | 4 | 4 | 5 | 4 | 3 | 3 | 1 | 4 | 2¾ |
| Carol | | | | | | | | | | |
| 11/24/70 | 3 | 2 | 3 | 2 | 2½ | 4 | 2 | 2 | 4 | 3 |
| 4/22/71 | 3 | 4 | 5 | 5 | 4¼ | 4 | 2 | 2 | 4 | 3 |

A. Does he find it difficult to fix attention for more than 5 minutes?
B. Does he find it difficult to recall information?
C. Does he find it difficult to integrate new information with information previously learned?
D. Does he find it difficult to grasp hypothetical situations?
E. Does he lack interest in learning language?
F. Does he hit, shove, fight easily?
G. Does he tend to be shy, withdrawn, seem to want to join but cannot bring himself to do so?
H. Does he seek reassurance about the quality of his work?

The two classroom teachers of groups A and B rated the children's behavior before the art classes began, and again five months later, using a 5-point rating scale, scoring 1 point to indicate that a child almost never showed a particular difficulty, and 5 points to indicate that the child showed this difficulty very often.

As shown in Table 1, Keith and Sam, the two children in Group A who attended 22 weekly art classes, improved the most in cognitive behavior, gaining in three of the four categories. The other four children who attended 5 weekly art classes, showed no gains in these categories. In emotional behavior, three of the children (including Keith) showed gains, one showed a loss, and scores for the other two children did not change.

As shown in Table II, 7 of the 8 children who attended 11 weekly art classes showed less difficulty in each cognitive category whenever it was possible to rate improvements which could not be rated if the initial score had been 1 point. In emotional behavior, 5 children showed gains, 3 showed losses.

These findings encouraged me to apply for a State Urban Education grant which resulted in the project reported in Reprint #5, published in 1973.

**TABLE II: CHANGES IN BEHAVIOR, GROUP B**

*(1 = almost never has difficulty; 5 = difficulty very often)*

| | Cognitive Behavior | | | | | Emotional Behavior | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | A *Ex At* | B *Recall* | C *Assoc* | D *Ab Th* | *Av Sc* | E *Motiv* | F *Aggr.* | G *Shy* | H *Reas* | *Av Sc* |
| Janet | | | | | | | | | | |
| 3/2/71 | 3 | 1 | 1 | 1 | 1½ | 3 | 5 | 5 | 5 | 4½ |
| 5/24/71 | 2 | 1 | 1 | 1 | 1¼ | 1 | 3 | 5 | 5 | 3½ |
| Lisa | | | | | | | | | | |
| 3/2/71 | 2 | 2 | 1 | 2 | 1¾ | 2 | 1 | 1 | 2 | 1½ |
| 5/24/71 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 1¼ |
| Peter | | | | | | | | | | |
| 3/2/71 | 3 | 1 | 1 | 1 | 1½ | 1 | 1 | 3 | 2 | 1¾ |
| 5/24/71 | 2 | 1 | 1 | 1 | 1¼ | 1 | 2 | 2 | 4 | 2¼ |
| Ellen | | | | | | | | | | |
| 3/2/71 | 2 | 5 | 5 | 5 | 4¼ | 1 | 1 | 1 | 2 | 1¼ |
| 5/24/71 | 1 | 2 | 2 | 3 | 2 | 1 | 1 | 1 | 3 | 1½ |
| Irving | | | | | | | | | | |
| 3/2/71 | 5 | 5 | 4 | 5 | 4¾ | 4 | 5 | 3 | 5 | 4¼ |
| 5/24/71 | 3 | 3 | 4 | 5 | 3¾ | 4 | 5 | 1 | 5 | 3¾ |
| Bob | | | | | | | | | | |
| 3/2/71 | 1 | 2 | 1 | 1 | 4¼ | 1 | 2 | 4 | 4 | 2¾ |
| 5/24/71 | 1 | 1 | 1 | 1 | 1 | 1 | 3 | 2 | 4 | 2½ |
| Donald | | | | | | | | | | |
| 3/2/71 | 1 | 2 | 2 | 2 | 1¾ | 1 | 1 | 1 | 3 | 1½ |
| 5/24/71 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 3 | 3 | 2¼ |
| Mary | | | | | | | | | | |
| 3/2/71 | 3 | 3 | 3 | 3 | 3 | 2 | 1 | 5 | 5 | 3¼ |
| 5/24/71 | 1 | 4 | 4 | 4 | 3¼ | 1 | 1 | 4 | 4 | 2½ |

### 2. *The Role of Art in the Conceptual Thinking, Adjustment, and Aptitudes of Deaf and Aphasic Children*

Doctoral project, Columbia University,1966

This project asked three questions. Does deafness impede aptitude for art? Can art experiences stimulate cognition, adjustment, and creativity? Can art programs pursue cognitive goals without neglecting or interfering with aesthetic goals?

In search of answers, experimental art classes were provided at four schools for deaf and language-impaired children. Their drawings and paintings were evaluated by two panels of specialists using questionnaires. One panel of 20 psychologists, psychiatrists, professors of special education, and educators of deaf and normally hearing children indicated whether they found evidence of specific cognitive skills, attitudes, and needs. Of 337 responses, 93% affirmed that the artwork provided this evidence, 5% were qualified, and 2% denied the presence of such evidence. The second panel of 20 art educators, indicated whether they found qualities such as art skills, sensitivity to art values, and story-telling. Of 260 answers, 93.5% affirmed that the artwork provided this evidence, 2.6% were qualified, and 3.9% denied the presence of such evidence.

### 3. *A Demonstration Project in Art Education for Deaf and Hard of Hearing Children and Adults*

U.S. Office of Education Project, 1967. ERIC Ed # 013 009

This project, supported by a grant from the U.S. Office of Education and sponsored by the New York Society for the Deaf, offered free art classes to hearing-impaired children and adults. Those who responded were accepted in the order in which they applied. So many applied that the students were limited to one term of 14 weekly classes rather than the two terms originally planned. They included 17 adults, 13 adolescents, and 24 children.

We did not use manual communication in these classes. I demonstrated rather than talked, and emphasized films, field trips, and reproductions of works of art.

Five assessments compared these students with hearing art students:

1. The *Torrance Test of Creative Thinking* was administered to 12 deaf students. Their responses were scored by E.P. Torrance and his associates who advised that 8 of the 12 students scored in the 99th percentile.

2. Paintings by 22 deaf students and 22 hearing students were rated by three university art professors for originality, expressiveness, and sensitivity to art values. The paintings were identified only by number and if by children, their ages. The average scores of deaf children and adults were slightly higher than the average scores of hearing painters, whereas deaf adolescents had slightly lower scores.

3. The portfolios of 16 deaf students were rated by 13 art educators who compared them with the work of their own hearing students. The judges did not know the purpose of the study nor that my students were deaf. The combined average score of deaf students was slightly higher than the combined average score of hearing students.

4. A painting produced in the adult art class was submitted to an annual juried competition. It was one of 85 works accepted from over 200 entries, and one of 12 paintings receiving an award.

5. Eleven teachers were invited to observe the experimental art classes, then compare deaf and hearing art students, again using questionnaires. Only the two observers who taught deaf students exclusively found them less independent, expressive, original, or sensitive to art values. The other nine teachers found the deaf students equal or superior to hearing students.

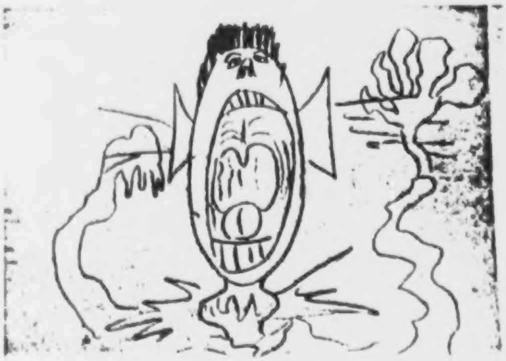
This finding prompted the observation that educators of deaf students seemed to underestimate the aptitudes and interests of deaf students. Consider the experience of Maureen who had just graduated from a public high school, with special programs for deaf students, when she enrolled in the Project art class. In high school, she had received "A's in art and hoped to study sculpture, but had been advised by guidance and vocational counselors that she could not meet the requirements of a professional art school. Before the art program ended, however, Maureen received *scholarships* in both ceramics and scupture from a professional art school. When she had an appointment with her high school guidance counselor, she asked me to accompany her, and I told him what she had accomplished during the year. He said I had wasted my time and given Maureen false hopes.

During the 1970s, Maureen received an associate degree from two college art programs, and taught hearing students in an industrial arts program.

## 4. *Shout in Silence, Visual Arts and the Deaf*

Catalogue published by The Metropolitan Museum of Art (1976)

Drawings and paintings by students who participated in these projects were organized into an exhibition, named for this drawing by "Charlie," one of the children.



The Smithsonian Institution circulated the exhibition from 1969 to 1976, and from time to time during its tour, sent me clippings, letters, and photographs which I photocopied and sent to the exhibitors.

When the tour ended, The Metropolitan Museum Museum of Art showed the exhibition in its 81st Street Gallery. It also published the catalogue, and invited us all to an opening celebration in 1976. By then, the children had become teenagers, one of whom, Charlie, brought along a portfolio of professional artwork.

After this and subsequent showings, I returned paintings and drawings to the exhibitors whenever possible, and donated the remaining art and texts to the International Children's Art Collection of the Los Angeles Junior Arts Center. I also donated a subsequent exhibition, *Art as Language* (see Reprint 12). The clippings, photos, and letters were donated to the Gallaudet University Archives. An abridged version of *the Shout in Silence* catalogue was published again in 1993.

After one of the exhibitors, G. Prabhakar, an adult who had received the juried show award, returned to his home in India, we corresponded for several years. Then in 1989, he wrote that he had sponsored an exhibition of drawings and paintings by deaf children and adults in Madras. He was planning another exhibition and asked me to contribute an article to the catalogue. He chose Reprint 9, and in 1993, Reprint 11 for inclusion in the catalogue of his third exhibition which presented the work of deaf artists from other countries in Asia as well as India.

### *5. Developing Cognitive and Creative Skills Through Art, Programs for Children with Communication Disorders or Learning Disabilities*

University Park Press, 1978; Ablin Press, 1986 and 1989

This book discusses ways that drawings can provide useful information about what children know and how they think and feel. It also presents developmental programs for children and adults, particularly those with difficulty understanding words or making themselves understood.

The first of two parts includes chapters concerned with the opportunities in art for cognition, adjustment, and assessment. It also includes chapters on expectations and creativity, illustrated with examples of drawings produced in experimental art classes by children with hearing impairments, learning disabilities, and emotional problems, as well as adult stroke patients.

The second section presents nonverbal art techniques for developing and assessing abilities usually associated with language skills. They include the ability to select, combine, and represent thoughts and attitudes through drawing from imagination; ability to order sequentially and conserve through painting, modeling clay, and predictive drawing; and ability to perceive and represent concepts of space through drawing from observation. This section also presents case studies and outcome studies from a State Urban Education Project.

An Epilogue summarizes the findings of a project supported by a grant from the National Institute of Education, as well as other studies that used the developmental and assessment techniques.

## 6. Review of *The Lowenfeld Lectures on Art Education and Therapy,*
John A. Michael, the Pennsylvania State University Press, 1982

*ARTherapy, Journal of the American Art Therapy Association,* Vol.3, No.2, page 91

If you are in your twenties or thirties, it may come as a surprise that Viktor Lowenfeld's famous book, CREATIVE AND MENTAL GROWTH, once included a chapter titled, "Therapeutic Aspects of Art Education." This 74-page chapter appeared until the fifth printing of the third edition. After his death in 1960, his book was revised and his chapter on art therapy disappeared without a trace.

In the early 1960s, art education was uncomfortable with art therapy. Art teachers were under the thumb of abstract expressionism, figurative art was taboo, and the time-honored occupation of working your way through college by posing for the life-drawing classes had disappeared. Many art schools had discontinued representation in any art form.

It is not surprising, therefore, that the chapter on art therapy was eliminated from Lowenfeld's book in subsequent editions, or that students in art education and art therapy never knew what they were missing.

Now they can know, thanks to two of Lowenfeld's former students. One had taped his lectures and the other has edited the tapes into the book that is the subject of this review. The first student, Ellen Abell, inspired by his lectures, had obtained his permission to tape them at Pennsylvania State University in 1958, just two years before his death. She had wanted to publish the tapes but after years of inactivity and in failing health, she turned to a fellow-student, John H. Michael, now Professor of Art Education at Miami University. He edited the lectures with the help of others who transcribed the tapes into longhand, and typed them. The 31 lectures have now been published by The Pennsylvania State University Press, 1982.

Section III of this work, titled, "Art Education Therapy," includes four lectures on the therapeutic aspects of art education. These are: "Psychotic-Neurotic Considerations; A Case Study of Virginia, a Neurotic Child; A Case Study of Aggie, a Mongoloid Individual; and A Case Study of Camilla, a Deaf-Blind Child."

From my point of view, this book should be required reading not only for art therapy students but also for art education students so that they can judge for themselves the work of a pioneer in both fields.

Viktor Lowenfeld is another of the refugees from Nazism who has made valuable and lasting contributions not only to us but also to the world at large. His books have been translated into Arabic, Chinese, Danish, German, Hebrew, Italian, Japanese, Norwegian, Spanish, and Swedish. One can only wonder whether his chapter on art therapy is missing from the foreign editions. If so, it is hoped that these *Lectures* will follow them, even if they can never catch up.

# Part Two: Learning Disability, Brain-Injury, and Mental Illness

# 10. The Role of Art in Developing and Evaluating Cognitive Skills,

**Co-author, Claire Lavin, *Ph.D.***

*Journal of Learning Disabilities*, Vol. 10, No. 7, 1977

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*supervision with 11 unselected learning-impaired children. They used special art techniques designed to develop and evaluate ability to order, perceive, associate, and represent components. After 10 weekly one-hour art periods, the children showed significant gains in concepts of space, order, and class, as measured by pre- and post-tests designed for the study.*

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Special art procedures for both assessing and remediating cognitive deficits were developed at a school for children with language and hearing impairments and produced significant improvements in the children (Silver 1973, 1975). Now in this study, we ask whether such testing and teaching procedures would be useful with children who have an opposite constellation of skills – verbal strengths and visual-motor weaknesses and whether the procedures could be used effectively by teachers other than the one who developed them. The teachers who participated were graduate students in art education and worked individually with the children.

In the initial project, the question was whether art procedures could be substituted for the use of language in developing the three basic concepts of space, order, and class from which all branches of mathematics are said to derive (Piaget 1970, p.24). Experimental art the $p < .01$ level in ability to form groups, and at the $p < .05$ level in spatial concept ($N = 16$) while control group children showed no significant improvement. A difference between groups was found at the $p < .001$ level in favor of the experimental group ($N = 18$) in 14 key items of the fall program posttest. The items included measures of ability to order sequentially, form groups, conserve, and predict spatial relationships.

## SUBJECTS

The children who participated in the present study were not selected. Announcements were sent to newspapers and to members of the Westchester Association for Children with Learning Disabilities, stating that art classes were being offered these children at the College of New Rochelle. The first 15 children who applied were enrolled.

One child had been diagnosed as hyperkinetic. Another was severely disturbed and attended a day school in a psychiatric hospital. The others attended private schools or special classes in public schools. All but two had disabilities of a visual-spatial-motor nature, and these two were eliminated from the statistical analysis (one was deaf and the other emotionally disturbed; both were able to perform the tasks on pre- and post-tests). Also eliminated from the analysis was a child who withdrew from the program and a child whose teacher became ill and withdrew from the course. A total of 11 children were included in the study, seven boys and four girls ages 7 to 11.

The 11 graduate students who worked with them were not selected either. They had registered for an elective course in therapeutic techniques in art education in the MA program at the College of New Rochelle. Their skills and backgrounds were varied. Most had provisional certification to teach art. Of the remaining, some had not yet received provisional certification while others had permanent certification.

The classes were held on Saturday mornings, all participants working together in a large studio under the supervision of the course instructor who had developed the teaching and testing procedures. The children attended 10 one-hour classes. The graduate students attended three preliminary lectures. Thereafter, each week for half an hour before the children arrived, they prepared for the day's activities. They stayed for another half hour after the children left to organize their notes and evaluate results.

When the classes ended, six of the graduate students scored the 44 pre- and post-test drawings which were identified only by number and presented in random order. The results were analyzed for reliability and for changes in ability to group and to represent spatial concepts. Scores for ability to order were obtained from students who were tested individually. In addition, parents were asked for anonymous evaluations of the program.

## TEACHING AND TESTING PROCEDURES

*Task 1: Ability to form groups in drawing from imagination.* The concept of a group or class of objects requires the ability to select components of the group, associate them with past experiences, and combine them into a form. These abilities are fundamental not only in mathematics but also in language in selecting and combining words to form sentences (Jakobson 1964, p. 25), and they seem fundamental as well in the nonverbal thinking used in drawing or painting pictures. The painter selects and combines pictorial components such as colors and shapes, and if his work is representational, he selects and combines subjects as well. He can also use them, intentionally or unintentionally, as symbols to represent a particular instance of a class (*this* man) or the class itself (Man). He can go beyond representation, using them to project ideas and feelings through distortions or omission, for example, or, by depicting action or interaction between them. In other words, a child can select, combine, associate, and represent as he draws, relating his subjects to one another, to himself, and to those who might look at his work.

During the first class, drawings on 3- by 5-inch cards were spread out on two tables, 12 drawings of people on one table, 12 drawings of objects on the other. The children were asked to choose one or more cards from each table and draw a story-telling picture about them. They were also asked not to copy the cards but to draw their selections in their own individual ways. The cards were available in later classes if a child needed help in getting started, but as a rule, they readily chose subjects of their own.

Remediation consisted of providing frequent opportunities to associate and reflect on components, to select and combine colors, shapes, and subject matter while drawing or painting from imagination. Emphasis was on content rather than form, meaningful pictures rather than abstract designs, exploratory learning rather than directive teaching, and eliciting responses rather than instructing. The children's first and last drawings from imagination were evaluated for ability to select, combine, represent, and express (see Table I).

*Task 2: Ability to preceive and represent spatial relationships.* The task on the pre- and post-tests designed to evaluate these abilities was to draw an arrangement of objects, as indicated in Table II. The remediation tasks consisted of drawing similar objects placed in the center of the room and sketched from different points of view.

*Task 3: Ability to order and conserve in manipulating objects, modeling clay, and painting.* As indicated in Table III, the task on the pre- and post-tests was based on an experiment

*TABLE I. Ability to associate and represent (form groups).*

Materials: paper 8½ by 11, black felt-tipped pen, and Set A (drawings on 3x5" cards).

Procedure: Present the cards in a random arrangement so that all are visible at the same time. For individuals, spread out on a table; for groups, prop against a wall. Ask subject(s) to draw a picture about one or more of the people or objects on the cards, the story-telling kind of picture, something happening, adding whatever is needed to make the drawing more interesting. Also, ask them not to copy the cards. "They are just here to help you get started. Draw in your own way. When you have finished, please turn your paper over and write your name and a title for your drawing."

Score each drawing on the basis of 1, 3, and 5 points, as indicated below. Score 2 or 4, if needed, to indicate an intermediate level.

This drawing suggests that the child has ability to:

A. Select at the level of:
   1. ___ Perception (subjects are not related but simply denoted, may be isolated or unrelated in size; no interaction).
   3. ___ Function (subjects are related concretely – what they do or what can be done to them).
   5. ___ Connotation (subjects are related abstractly – goes beyond denoted meaning, implies more than is visible; suggestive, indirected, possible rather than actual events).

B. Combine at the level of:
   1. ___ Proximity, distance, enclosure (subjects float in space, drawing is fragmentary, uncoordinated).
   3. ___ Base line (bottom of paper may serve as base line).
   5. ___ A unified whole (attention given to whole paper, or background and subjects shown from a single point of view).

C. Represent at the level of:
   1. ___ Imitation (copied model or used stereotype such as stick figures; impersonal).
   3. ___ Reconstruction (changed model or stereotype, or used pictographs – arrows, dotted lines, cartoon devices).
   5. ___ Transformation (highly personal, inventive, imaginative).

D. Express verbally at the level of:
   1. ___ Description (title simply describes what is visible).
   3. ___ Amplification (title elaborates on what is visible).
   5. ___ Transformation (symbolic or abstract, presents thoughts or feelings not evident without verbal explanation).

E. Express nonverbally through visual art medium, at the level of:
   1. ___ Commonplace form.
   3. ___ Moderate skill, care, exploration.
   5. ___ Skill or sensitivity to art values.

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by Bruner and Kenny (1966, p. 156, 183) and on the classic Piagetian test of conserving liquid. Remediation consisted of modeling clay from imagination and following an experiment by Sonstroem for developing ability to conserve solids (Bruner 1966, p. 208). In addition, the mixing of poster paints on a paper palette with palette knife was introduced in the second art class. The children were encouraged to mix their own colors from an array of red, blue, yellow, black, and white, and asked to mix a series of tints or shades.

In general, instruction was indirect in order to encourage spontaneity and exploratory learning. Although the ten sessions were structured, most tasks were open-ended to leave the children as free as possible to make decisions for themselves. When tasks could not be open-ended, they were limited to 5 or 10 minutes and followed by free-choice activities.

Other procedures were used which do not involve drawing and are not described here. They were games adapted from experiments by Piaget (1970, p. 29, 36, Piaget & Inhelder 1967, p. 379, 421), and used individually when they seemed appropriate.

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*TABLE II. Ability to perceive and represent.*

Materials: paper 8½ by 11, black pen, and Set B (3 cylinders differing in height, width, and color; a large pebble, and a cardboard base on which their outlines are traced in the positions shown below).

Procedure: Place the arrangement as shown against a wall so that the back of the base plane touches the wall, and ask subject(s) to sketch it from observation. To clarify the task, sketch the arrangement yourself very quickly, no more than 20 seconds, then put your sketch out of sight.

Score drawings on the basis of 0, 1, 3, and 5 points as indicated on the scoring form below.

Scoring Form

name age diagnosis date

A. Left-right relationships (horizontality, width):
   1. ___ only 2 adjoining objects are correctly placed.
   3. ___ 3 adjoining objects, or 2 pairs are correctly placed.
   5. ___ all adjoining objects are correctly placed.

B. Above-below relationships (verticality, height):
   1. ___ the relative height of any 2 objects is correct.
   3. ___ the relative height of 3 objects is correct.
   5. ___ the relative height of all objects is correct.

C. Front-back relationships (perspective, depth):
   1. ___ base plane is represented by a line enclosing the objects.
   3. ___ base plane is represented by base line or bottom of paper.
   5. ___ base plane is represented as a plane supporting objects which appear as seen from a single point of view. (score zero if base plane is not represented)

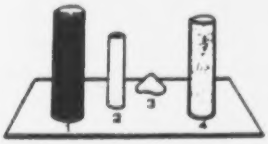

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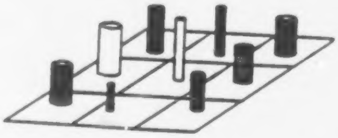
*TABLE III. Instructions for administering test and evaluating ability to order a matrix.*

Procedure: Present the cylinders arranged as follows:
1. Remove first 1 cylinder, then 2, then 3, and ask subject to replace them.
2. Scramble the cylinders and ask him to build "something like what was there before."
3. Scramble in the southwest corner of the grid (the shortest, thinnest) in the southeast corner. Ask him to build something like what was there before, leaving the cylinder where it was placed by the examiner.

Scoring:
   1. ___ Can replace cylinders.
   3. ___ Can reproduce matrix.
   5. ___ Can transpose matrix.



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*Based on a test by Kenny and Brunner 1966, p. 156.

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## TWO CASES IN POINT

*Marjory.* To illustrate, Figure 1 is the drawing made by Marjory*, age 12, when she was first asked to draw the arrangement of four objects on a table, as shown in Table II. Figure 2 is her response to the same request in the last session. Marjory was in a "mainstreaming" program for children with learning disabilities in a suburban public school. According to her teacher, she often failed to distinguish between the letters and spaces on a page. This perceptual difficulty is reflected in her first drawing where she gave the background more importance than the subjects. Furthermore, she drew only three of four objects and confused their colors and relationships in width, heighth, and depth. Her first drawing received an average score of 3.66 points while her last drawing received a score of 5.16 points (see Table V).

Figure 3 is Marjory's response in the first session when she was asked to select one or more of the model subjects. She selected two cards, a snake and a bed, and after drawing Figure 3, explained that "The first picture shows the snake going to bed. The second shows it in bed and the third shows it going away from bed. That's all." This drawing received an average score of 2.75 (see Table V). Figure 4 is her response to the same request in her last session when she chose a model banana and made up a story to explain her drawing as "a picture of a family at home. The man is eating some bananas. The girl is putting some in her lunchbox and the mother is coming down stairs in the morning with a baby." This drawing received an average score of 3.5 points, indicating gain in ability to group or associate.

Marjory was able to order sequentially with ease. This was tested by asking her to order a series of sticks from shortest to longest and a series of colors from lightest tint to darkest shade, in addition to transposing the matrix as indicated in Table III.

Marjory was present at eight of the ten art periods. The graduate student who worked with her had provisional certification as an art teacher, and had been working for eight years in New York City Board of Education schools.

In response to the questionnaire, Marjory's parents wrote, "This was a very positive experience for [Marjory]." They thought she had gained in all the specified areas but social development. They found her self-esteem much greater and volunteered that they had bought $30 worth of art materials so that she could continue to paint at home.

*Donald.* Figures 5 through 8 are the drawings made by Donald, age 9, with learning disabilities and socialization problems who prefers not to verbalize. According to his school report, "He seems very aware of his handicaps and though he has many skills, he refuses to use them in a group setting with his peers, . . . refuses to participate in almost all activities unless coaxed or given special reward." His performance on the WISC test showed large variations in individual tests (from 4 to 14 points) which suggests that he was not using his full potential.

Figure 5 is his response in the first session to Task 1. He chose a model mouse and scribbled over his drawing. Figure 6 is his response in the last session (he attended nine) to the same task, when he chose a model lamp and explained his drawing as a picture about his grandmother whom he visits every Sunday. He drew her at a stove making hamburgers for him, then added the path with a car driving on it and a house at the end of the path. His scores in ability to form groups improved from 1 to 2.50 points. In spatial orientation, his score in drawing from observing four objects on a table improved from .91 to 5 (see Figures 7 & 8). In ability to order a matrix, his score improved from 3 to 6 points. The graduate student who worked with him had received provisional certification to teach just as the art program began.

## RESULTS

The reliability of judges' ratings of the test results was determined by using an analysis of variance to estimate reliability of measurements as described by Winer (1962, p. 128). The obtained reliability quotient was based upon the scoring of tests by six judges. Separate analyses were performed for scores both on the tests of the ability to form groups and on the tests of spatial orientation.

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**Names of the children have been changed to protect their identities.*

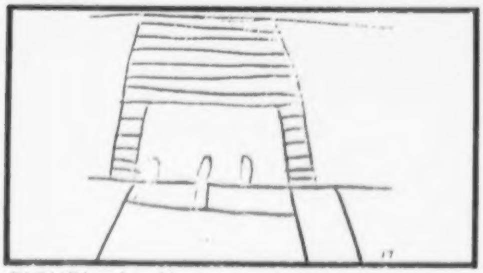

FIGURE 1. Marjory's pretest drawing on Task 2.

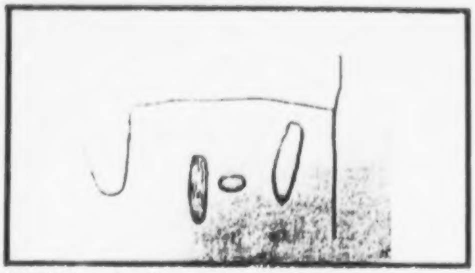

FIGURE 2. Marjory's posttest drawing on Task 2.

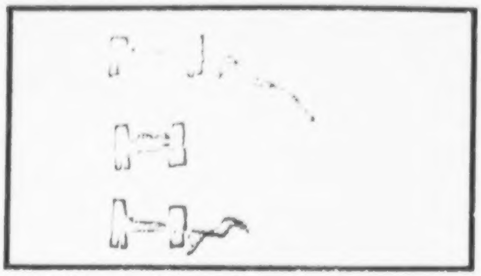

FIGURE 3. Marjory's pretest drawing on Task 1.

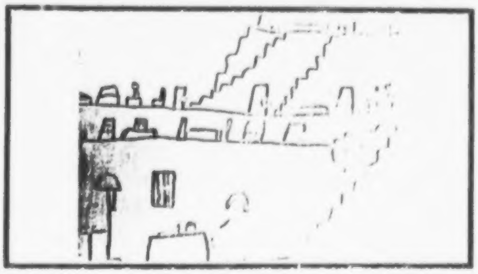

FIGURE 4. Marjory's posttest drawing on Task 1.

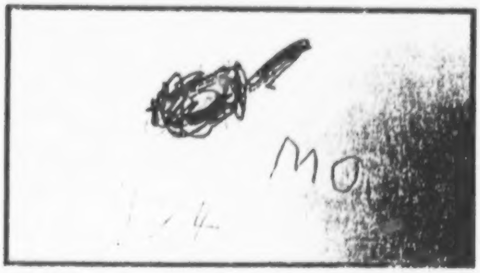

FIGURE 5. Donald's pretest drawing on Task 1.

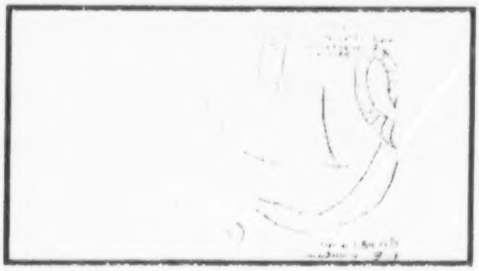

FIGURE 6. Donald's posttest drawing on Task 1.

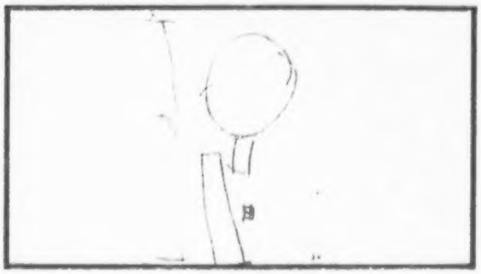

FIGURE 7. Donald's pretest drawing on Task 2.

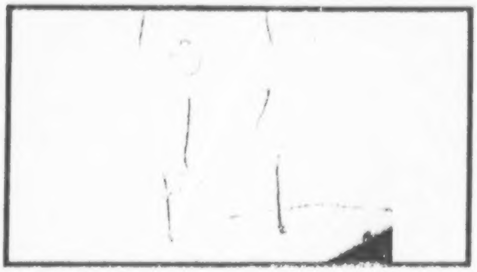

FIGURE 8. Donald's posttest drawing on Task 2.

For the ability to form groups, the obtained reliability coefficient was .852. The reliability coefficient for spatial orientation was .944. The obtained coefficients reveal that the six judges, based upon their training, had a similar frame of reference and displayed a high degree of agreement in scoring the tests.

The effectiveness of the training program was evaluated by using a $t$ test (N = 11) for correlated means to determine the significance of differences in mean pre- and post-test scores. Separate analyses were performed for scores on the tests of the three separate areas of cognition – the ability to form groups (select and combine), spatial orientation, and the ability to order a matrix.

All the obtained $t$ values were statistically significant. The improvement in the ability to form groups ($t = 4.79$) and in ordering a matrix ($t = 6.54$) was significant at the .01 level. The improvement in spatial orientation was significant at the .05 level ($t = 2.42$). The impaired children who engaged in the therapeutic art program, therefore, improved significantly in the three areas of cognitive development that were the focus of the study.

Of the 15 parents, 14 returned the questionnaires. In response to the question, "Did your child enjoy coming to the class?" 12 checked the highest rating, and 13 indicated that they would like to be informed about future classes. These results are indicated in Table V.

## SUMMARY

The statistical analyses and the questionnaire responses support the hypothesis that children with learning disabilities would show improvement in the three areas of cognitive development under consideration when taught by graduate students trained in using the art procedures developed in the project for children with communication disorders.

*TABLE IV. Questionnaire sent to parents of 15 children who attended art classes (with total of responses indicated).*

Dear Parent:

Now that our experimental art class is coming to an end, we would like to know if it was worthwhile for the children who participated. It would be most helpful in planning future classes if you would answer the following questions with checkmarks in the appropriate boxes.

1. Was the art class beneficial for your child in:

| | Not at all | Very little | Sometimes | Much | Very much |
|---|---|---|---|---|---|
| Visual-motor development | | | 3 | 1 | 2 |
| Cognitive development | | | 3 | 1 | 2 |
| Artistic development | | 1 | 2 | 1 | 3 |
| Emotional development | | | 2 | 1 | 5 |
| Social development | 1 | | 1 | 2 | 2 |
| Other ______________ | | | | | |
| 2. Did your child enjoy coming to the class? | | | 1 | 1 | 12 |
| 3. Would you like to be informed about future classes? | | | 13 yes | 1 no | |

There are no plans for continuing the class next term. Arrangements made directly with student teachers for continuing, would not be under the auspices of the College of New Rochelle, and accordingly the College would have no responsibility for supervision.

COMMENTS:

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*TABLE V: Results of art program for children with learning disabilities taught by graduate students at College of New Rochelle, fall 1974.*

| | | | Ability to Form Groups* | | | Spatial Orientation† | | | Ability to Order a Matrix** | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Child** | **age** | **sex** | **Pre** | **Post** | **Change** | **Pre** | **Post** | **Change** | **Pre** | **Post** | **Change** |
| Da | 7 | F | 1.16 | 2.66 | +1.50 | 2.16 | 2.16 | 0 | 1 | 5 | +4 |
| Ro | 11½ | M | 1.50 | 3.33 | +1.83 | 2.91 | 7.33 | +4.42 | 5 | | |
| Donald | 9 | M | 1.00 | 2.50 | +1.50 | 0.91 | 5.00 | +4.09 | 3 | 5 | +2 |
| Ra | 9 | M | 1.16 | 1.83 | +0.67 | 2.08 | 1.25 | −0.83 | 5 | | |
| Ca | 11 | M | 1.66 | 1.16 | −0.50 | 0.75 | 1.58 | +0.83 | 5 | | |
| Mario | 7 | M | 1.08 | 3.41 | +2.33 | 0.00 | 1.66 | +1.66 | 1 | 3 | +2 |
| Ma | 7¼ | F | 2.91 | 2.41 | − .50 | 4.50 | 2.16 | −2.34 | 5 | | |
| Ca | 7 | F | 1.83 | 1.16 | − .67 | 0.83 | 2.58 | +1.75 | 2 | 3 | +1 |
| Marjory | 11½ | F | 2.75 | 3.50 | + .75 | 3.66 | 5.16 | +1.50 | 5 | | |
| Pa | 8½ | M | 2.58 | 2.83 | + .25 | 3.58 | 2.50 | −1.08 | 4 | 5 | +1 |
| To | 8 | M | 3.00 | 2.00 | −1.00 | 2.16 | 2.58 | + .40 | 2 | 3 | +1 |

---

**Average scores of two tests scored on the bases of 1 to 5 points with 5 = highest score. As measured by test of ability to form groups (select and combine), improvement was significant at the .01 level (t= 4.79).*

*†As measured by test of spatial orientation (left-right, above-below, front-back), improvement was significant at the .05 level (t = 2.42).*

***As measured by test of ability to order the matrix, improvement was signficant at the .01 level (t = 6.54)*

The success of this training program reveals that art techniques can be used to assist learning disabled children in expressing concepts nonverbally through visual-motor channels in spite of impaired functioning in this area. Through the use of cognitively oriented experiences with drawing, modeling, and painting, learning disabled children were able to develop the skills needed to bring order to their perceptually disoriented world. The variety of media provided tactile and kinesthetic feedback while the nature of the art activities provided practice in the cognitive visual skills of analysis, integration, and synthesis. The instructional activities were conducted in a success oriented, nonthreatening atmosphere in conjunction with enjoyable art activities far removed from those specifically academic tasks that to many learning disabled children simply mean failure. As a result of these factors, the children made significant progress in the cognitive skills that were the focus of the study.

The present study revealed that visual-motor weaknesses can be attacked successfully through the use of art experiences. Since the tested abilities, forming groups, perceiving and representing spatial relationships, ordering and conserving, are also fundamental in the development of language as well as mathematics and reading ability, future investigations into the effect upon these more complex behaviors might also be fruitful.

An attempt is currently being made to verify the results of this investigation. We hope these follow-up studies will provide additional evidence regarding the effectiveness of cognitive art instruction with learning disabled children. — *Graduate School, Department of Art, College of New Rochelle, New Rochelle, New York 10801.*

*ACKNOWLEGMENT*

*We would like to thank the six graduate students who scored the drawings for this study: Laura D'Amico, Jo-ann O'Brien, Martha Geller, Judy Itzler, Mary Simons, and Phyllis Wohlberg. In addition, we feel credit is due to Mary Lou Impellizeri who worked with Marjory and Phyllis Wohlberg who worked with Donald.*

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## Postscript

After this article was published, I found that Tables II and III had been altered in such a way that their meanings had changed. In Table II, the cylinders had been redrawn changing their heighth, width, and relationships in depth. In Table III, the cylinders were placed at random on the grid, instead of becoming progressively taller and wider. The *Journal* corrected the errors in the next issue.

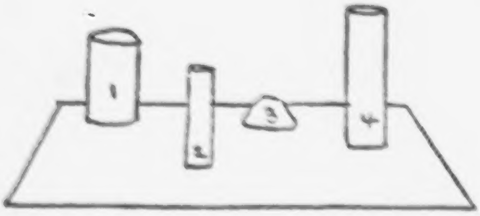

Table II

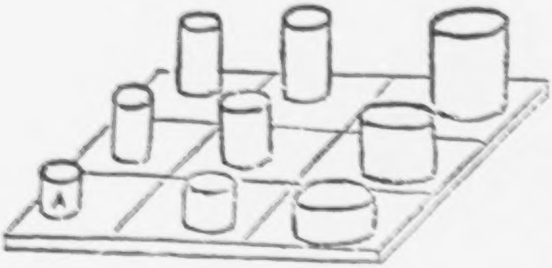

Table III

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## 11. Teaching Handicapped Children

*Arts & Activities*, Vol. 85, No.3, 1979

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MANY ART TEACHERS are now being asked to work with handicapped children as a result of Public Law 94-142, the Education for All Handicapped Children Act. This law requires that free public education must be made available to all, and for each child there must be an individualized educational program based on nondiscriminatory testing.

If some teachers feel overwhelmed at the prospect, they can be assured that the similarities in teaching handicapped and so-called normal children are so much greater than the differences that similar approaches can be used with all if we shift emphasis to meet individual needs. We can stress some procedures and minimize others without deviating from principles. For example, emphasize demonstration and minimize talk when working with children who are deaf, hard of hearing, language impaired or, for whatever reason, have difficulty understanding what is said or making themselves understood. Art techniques often lend themselves to pantomime. Even with unimpaired students, it is often better to demonstrate a technique than to describe it. Abstract ideas often can be conveyed by acting out alternatives such as standing close to a painting and looking puzzled, then stepping back a few paces and coming up with an idea.

In working with any student, one objective in teaching art is to extend the range of communication, to help students draw or paint in order to help them say well what they want to say. This objective can be emphasized in working with children — or adults — who have difficulty putting thoughts into words. Encourage them to draw or paint about the people and events they know, stressing content rather than form, meaning rather than elements of design, representational subject matter rather than abstractions.

In working with all students, another objective is to provide opportunities for exploratory learning, for experimenting with art media and techniques. This objective can be emphasized in working with children or adults who have perceptual and/or motor handicaps. In this situation, call attention to form rather than content; shapes, colors, and designs rather than subject matter. Minimize drawing skills and emphasize kinesthetic activities by providing clay for modeling form and materials for making mosaics and collage. With a student who has severe motor impairment, I have found it helpful to place one hand over mine while I do the task, then invite him to try it alone.

With emotionally disturbed children, emphasize acceptance and reassurance and avoid situations that may lead to failure or distress. Art experiences provide special opportunities for reinforcing emotional balance. In drawing about people and events, a young person may be able to fulfill wishes vicariously or express unacceptable feelings in an acceptable way. By the same token, we should be aware that art experience, instead of building confidence, provides special opportunities for tearing it down. The subjectivity of painting makes the painter particularly vulnerable to criticism of his work. Unlike a daydream, a fantasy on paper is vulnerable to anyone who sees it and feels compelled to express a judgment. However, guided by a sensitive teacher, an art experience can be healing in itself without the interpretation of symbolic meanings.

With visually impaired children, emphasize tactile perception and minimize the visual by providing opportunities to model clay instead of painting. With the hyperactive, emphasize quick results to attract interest and prolong attention, as in monoprinting techniques that call for rhythmic, repetitive designs.

With learning disabled children, art activities that develop concepts related to cognition can be emphasized. There are three such concepts said to be fundamental in reading, mathematics and everyday life: the concept of space, the concept of sequential order, and the concept of a class or group of objects. Drawing from observation involves the ability to perceive and represent spacial concepts. Painting, modeling clay, and predictive drawing involve the ability to order sequentially. Drawing from imagination involves abilities to select, combine, associate and represent ideas.

Special art procedures, developed to substitute for language in evaluating and developing the above concepts, were used in work with children having language and hearing impairments in an Urban Education Project. Children in the experimental group showed significant improvement in their ability to express concepts of space, order and grouping. Although the main question was whether art could take the place of language in developing concepts, aesthetic development was also of much concern and significant improvement was noted in art skill and expressiveness. Similarly, the procedures were found to be effective in a subsequent study involving children with visual-motor weaknesses.

Sensitive art teachers should find working with handicapped students a satisfying challenge to their abilities to be flexible, creative and skillful in responding to individual differences. ■

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## 12. Art as Language

Catalogue of an exhibition circulated by the Smithsonian Institution, 1979-1982

Abridged and Revised

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### Introduction

When children, or adults, have impairments we are often so preoccupied with their limitations that we lose sight of their strengths. One strength, often overlooked, is the ability to represent thoughts and feelings through drawings. For those who have language disorders, drawings can serve to bypass verbal weaknesses by capitalizing on visual strengths, and provide information about what they know and how they think or feel.

The drawings and paintings in this exhibition were created in experimental art programs by children and adults who were unable to use language freely in talking, writing, or reading.

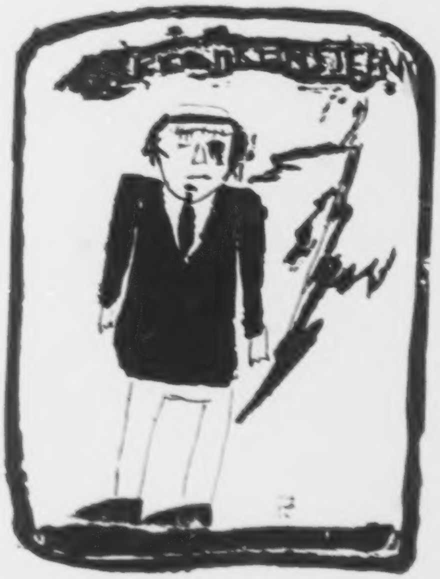
### Art Symbols and Thinking

Language is obviously related to thinking, but whether it is essential is open to question. Research by Piaget and other investigators has demonstrated that high level thinking can and does occur without words.

Art symbols, like language symbols, are ways of labeling perceptions and experiences. Children and adults with inadequate language may be unable to convey their thoughts effectively. Even so, their capacity for symbolizing may be intact, and they may be able to convey their thoughts nonverbally by drawing them.

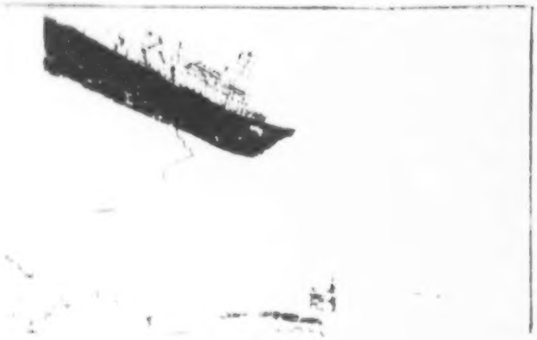
**1. Frankenstein**
Randy, 12
Receptive and expressive
language disorders

In this painting from imagination,
Frankenstein could represent
the fictional character or
or someone else in disguise.



### 2. Ship Caught on an Iceberg

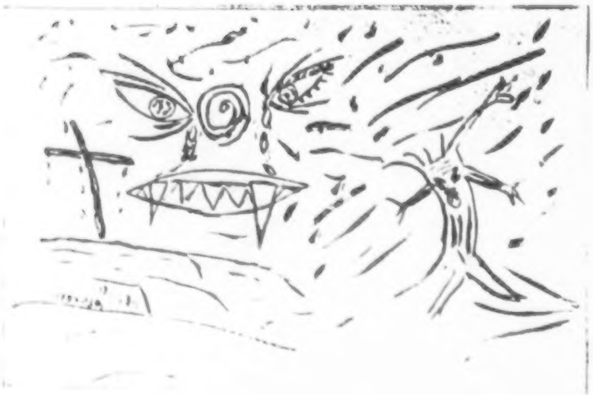
Again, Randy portrays a powerful subject in danger, perhaps feared, perhaps wished.



### 3. Mother's Grave

Fred, 11
Receptive and expressive
language disorders

Fred identified the face as his father, the tree as himself, and on the tombstone, his mother's name. His classroom teacher asked him if his mother had died, pointing backward over her shoulder. Fred shook his head, no, pointing forward to the future.



## Left and Right Hemisphere Thinking

Drawings and paintings can provide information about cognition as well as emotion. Language disorders may result from damage to the brain's left hemisphere; visual motor disorders, from damage to the right. The left hemisphere may be specialized for sequential, analytical, and conceptual thinking, as well as language; the right hemisphere, for spatial thinking and visual-motor skills.

It is known that the hemispheres share information. Perhaps right hemisphere skills (such as drawing) can be used to assess and develop the left-hemisphere skills of inarticulate children and adults.

## 1. Testing and Developing Concepts of Sequential Order through Painting

The ability to arrange a series or sequence of objects is linked with mathematics and reading. Some investigators have found that children with reading problems have more difficulty with the concept of sequential order than with concepts of space or class inclusion.*

The ability to sequence is usually developed through language but it can be developed, and tested, through the visual arts as well.

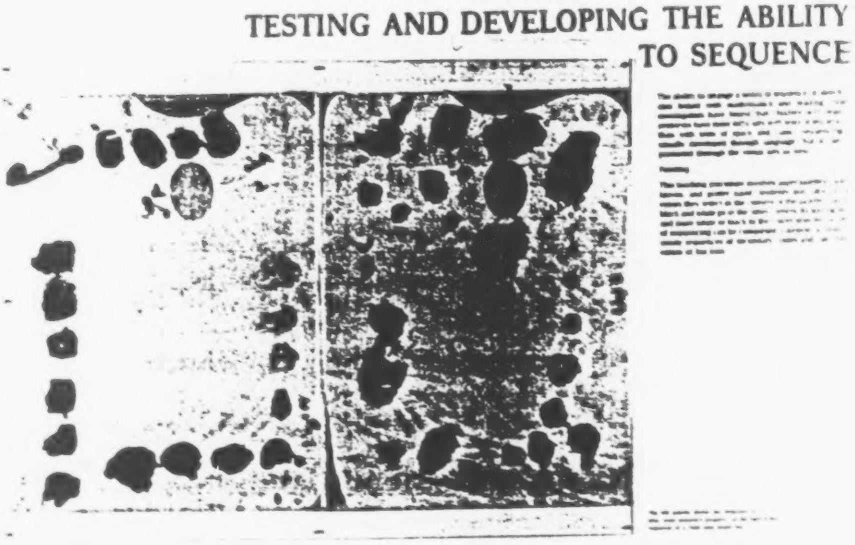
### Painting

This procedure uses paper palettes (or cafeteria trays), palette knives (or flat sticks), and five poster paints: red, yellow, and blue (the three primary colors), white, and black. From these, greens, oranges, and purples can be mixed, as well as tints and shades.

**The task:** Select two primary colors. Using the palette knife, put a dab of one color in a corner of your palette, clean the palette knife and put a dab of the other color in another corner, then a dab of white and a dab of black in the other two corners. Create a series of colors between any two dabs by adding more and more of one color to another.

The palette on the left is the response of a child who can create a sequence. The palette on the right is the response of a child who has difficulty performing the task.

The art program provides additional opportunities to create sequences by modeling clay into a series of shapes and sizes, and manipulating various objects.



TESTING AND DEVELOPING THE ABILITY
TO SEQUENCE

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* Bannatyne, R., *Language, Reading, and Learning Disabilities*, Chas C Thomas, springfield, Il.,1971.

## 2. Testing and Developing Ability to Conserve through Predictive Drawing

Predictive drawing tasks are used to asses the ability to conserve, to recognize that an object may remain the same in spite of transformations in its appearance. The ability to conserve is recognized as basic in logical thinking, and is evident in concepts of horizontality and verticality, the most stable frameworks of everyday experience, according to Swss psychologists, Jean Piaget and Barbel Inhelder,* who also devised the following tasks.

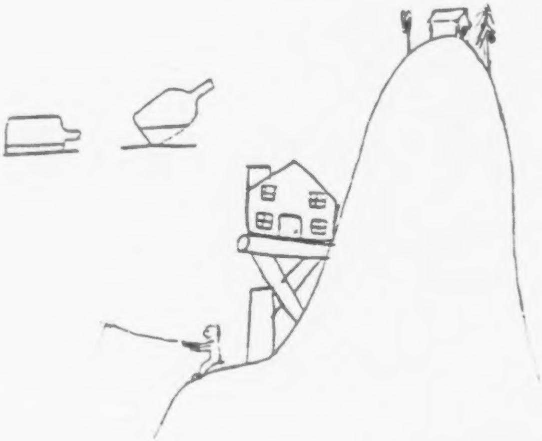
**Two tasks:** Add lines to these outline drawings to show how how water in a partly-filled bottle would look if the bottle were tilted, and how a house would look if moved to a steep slope.

Responses are scored 1 to 5 points (5 the highest score), based on the stages of development observed by Piaget and Inhelder.

The art program provides opportunities to predict, and test out predictions by modeling clay into reversable shapes, manipulating objects, and drawing or painting predictions.

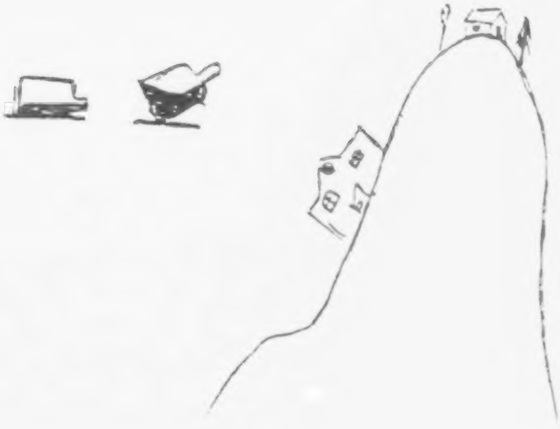
4. Predictive drawing by George, 13
Expressive and receptive language disorders as well as hearing-imparments.

Scores. Horizontality 5
Verticaily 5



5. Predictive drawing by Judy, 14
No known impairments.

Scores. Horizontality 1
Verticality 2



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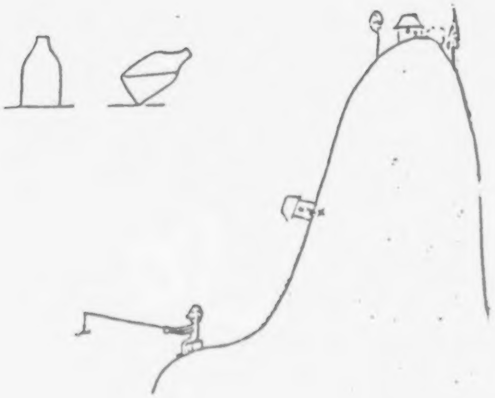
[*] Jean Piaget and Barbel Inhelder, *The Child's Conception of Space*. NY, W.W.Norton & Co, 1967.

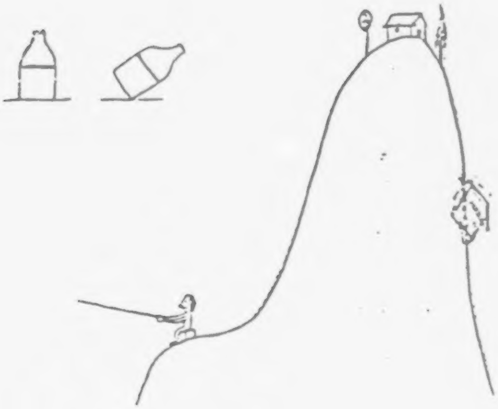
6. Predictive drawings by an adult in a workshop for teachers and mental health professionals.

Scores: Horizontality 4
Verticality 1



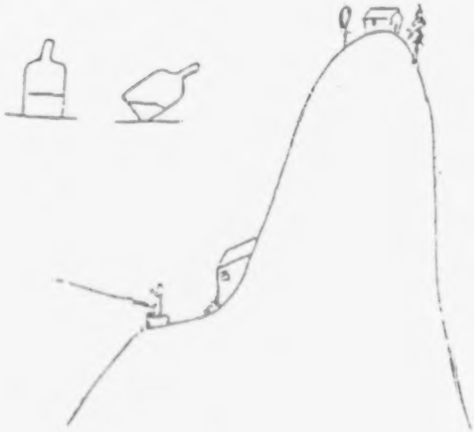
7. Predictive drawing by another adult in the workshop

Scores: Horizontality 1
Verticality 2



8. Predictive drawings by Manual, 12
Receptive and expressive language impairments

Scores: Horizontality 4
Verticality 4



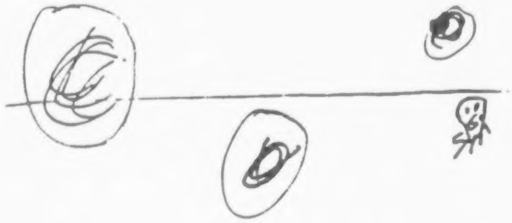
It was surprising to find that "normal" students and educated adults received low scores and that "handicappped" students like George and Manuel received high scores.

## 3. Testing and Developing Concepts of Space through Drawing from Observation

The ability to discern and reprsent the spatial relationships between objects is also associated with reading and mathematics.

**The task:** Draw from observation an arrangement of three cylinders and a toy bug. Drawings are scored 1 to 5 points for ability to represent the left-right, above-below, and front-back spatial relationships, with 5 points the highest score. The task is presented before and after the art program which provides opportunities to draw toy landscapes and other models or arrangements from observation.

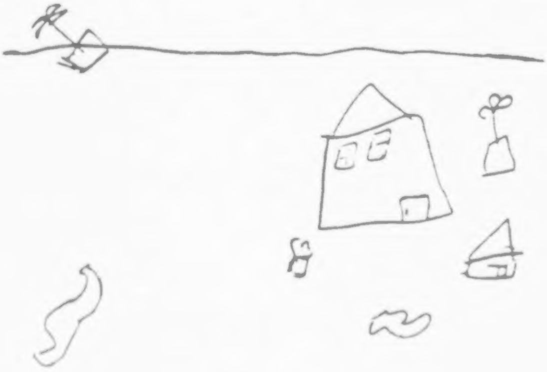
9. First drawing from observation by Ben, 14
Expressive language disorders
and poor visual-motor coordination



Ben has represented the cylinders as circles with scribbles inside. One cylinder seems to float above the table surface.

| | | |
|---|---|---|
| Scores. | Left-right | 3 |
| | Above-below | 0 |
| | Front-back | 3 |

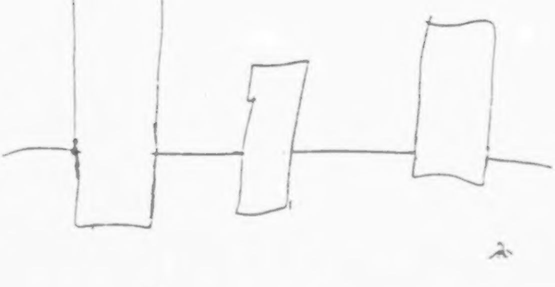
10. Ben's second drawing from observation, using the toy landscape as model.



11. Ben's third drawing from observation.

Since Ben's mistakes were not corrected, his gains reflect his own observations.

| | | |
|---|---|---|
| Scores. | Left-right | 5 |
| | Above-below | 3 |
| | Front-back | 3 |



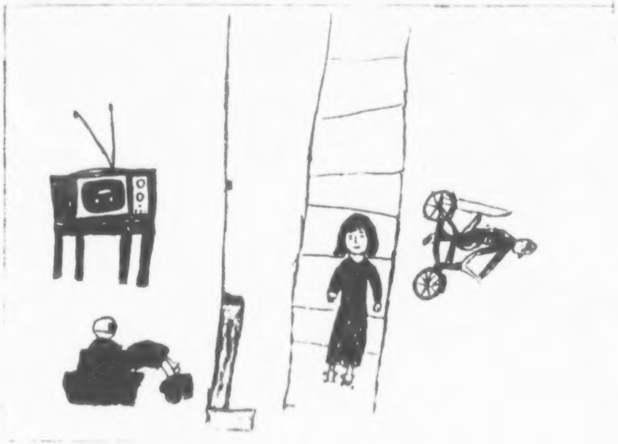
## 4. Testing and Developing Ability to Select, Combine, and Represent through Drawing from Imagination

The concept of a class (or group of objects) involves ability to select and combine into a context, such as selecting words and combining them into a sentence. Selecting and combining are also fundamental in figurative drawing - selecting subjects and combining them into pictures.

**The task:** Select two stimulus drawings, imagine something happening between them, then show what is happening in a drawing of your own. Feel free to change the stimulus drawings, and to add your own ideas. When you finish drawing, give your drawing a title.

To assess ability, drawings are scored 1 to 5 points for cognitive or emotional content.

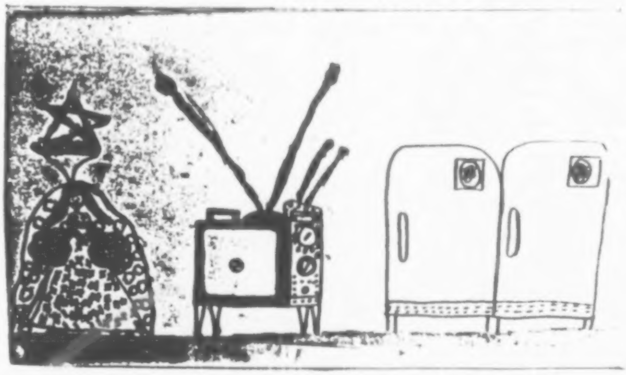
**A. Cognitive Content**, ability to select, combine, and represent



12. Drawing from Imagination by Dan, 15
Expressive language disorders.

Title, "Inside Watching TV"

Scores. Selecting: 3 (based on function)
Combining: 1 (based on proximity)
Representing: 3 (restructured models)



13. Drawing from imagination by Daniel, 9

Receptive and expressive language disorders, and regressive speech patterns following surgery

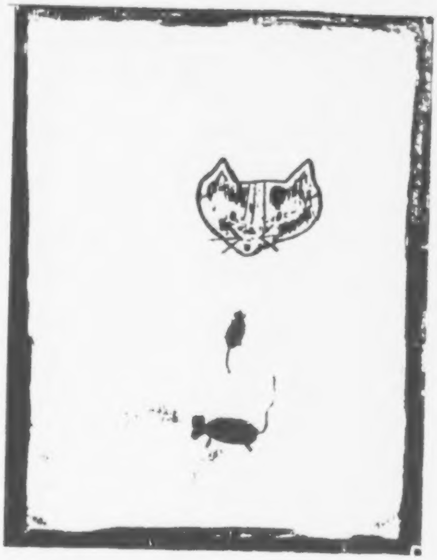
Title, " Wedding Presents"

Scores: Selecting: 3 (based on function)
Combining: 3 (along a base line)
Representing: 5 (creative, inventive)

14. Drawing from Imagination by Tom, 14
Receptive and expressive language disorders, hearing loss, and inadequate retention of words

Title: "Cat and Mice"

Scores: 5 points in each category



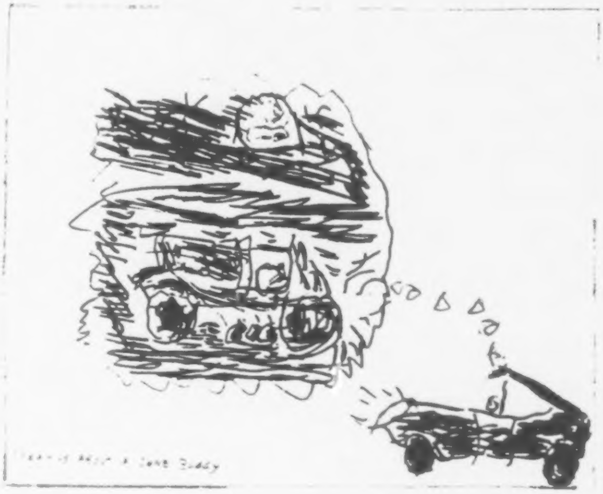
## Adult Stroke Patients

To determine whether the task can provide useful information about the thinking of inarticulate adults, it was also presented to 8 patients in a Rehabilitation Center.

15. Drawing from Imagination by Gary

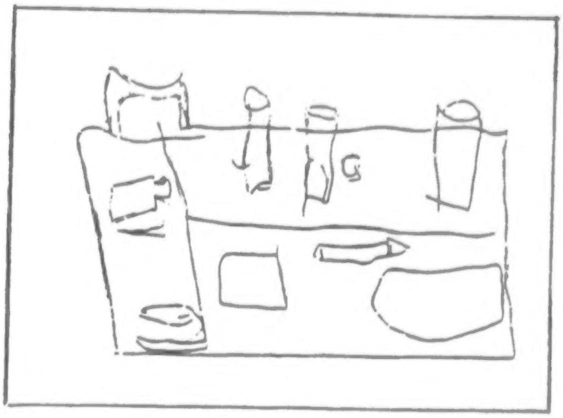
Paralyzed on both sides of his body, movement limited to two fingers of his left hand. Although he did not speak, he communicated by pointing to letters on an alphabet board.

Title, "Dreaming about a Dune Buggy"



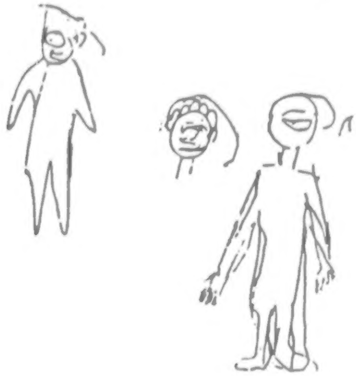
Gary chose one stimulus drawing, the car, and drew two cars, using the cartoon device of a balloon around the upper car and the moon above, suggesting the lower car's thoughts.

The idea of a car dreaming about another suggests that Gary had a lively imagination. The lower car may represent his immobilized self dreaming of romance. His drawing indicates that Gary retains the ability to select, combine, and represent.



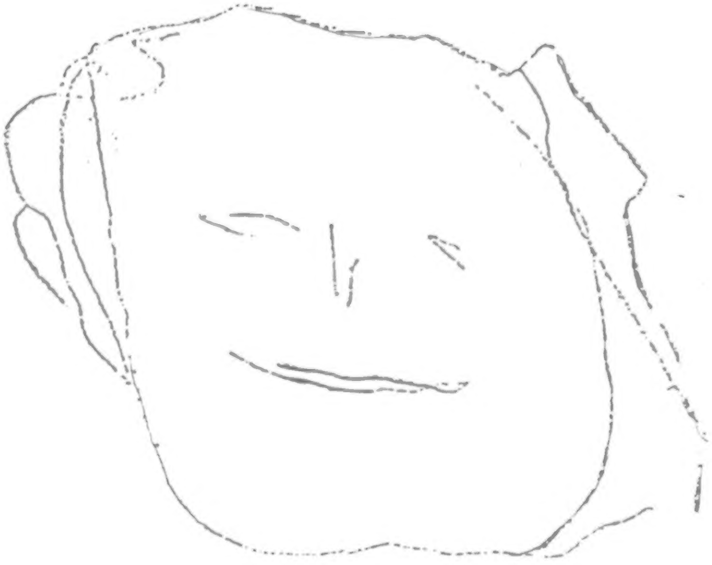
16. Gary's drawing from observation.

In his enthusiasm, he included a chair and other items in his drawing of the cylinder arrangement, indicating that his ability to perceive and represent spatial relationships also remains intact.



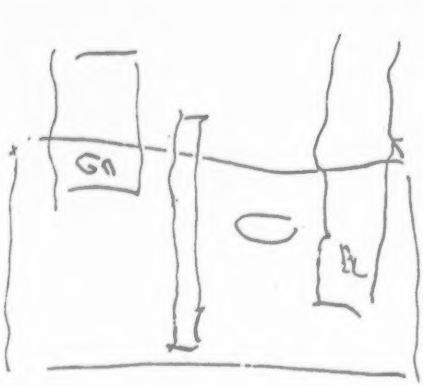
17. Mrs V, stroke patient unable to speak

Since she seemed unable to do the tasks, the art therapist drew several incomplete figures, inviting Mrs V. to complete them. After she scribbled over blank faces, the therapist sketched a portrait of Mrs V, then offered her the pencil.



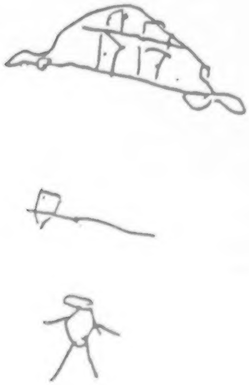
18. Mrs V responded with this drawing

19. Mrs M's drawing from observation.
She was able to understand
speech but unable to speak.



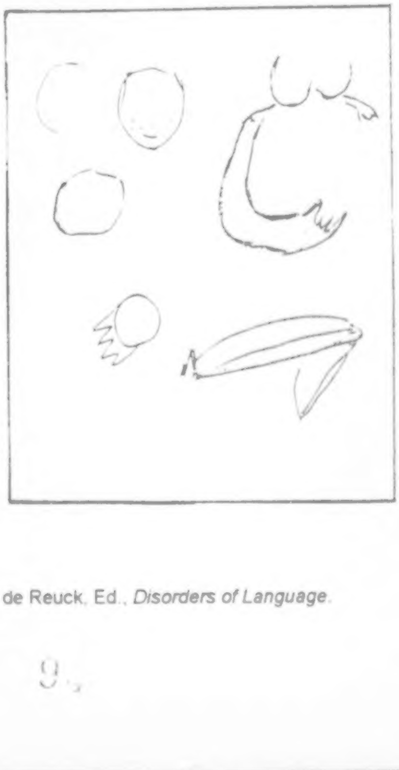
20. Mrs M's drawing from imagination.

She did not combine the subjects she chose. In aphasia, selecting words remains intact, but combining words into sentences is impaired.* Mrs M's failure to combine the subjects of her drawing seems to parallel her inability to speak, just as as her ability to select subjects, and draw from observation, seems to parallel her ability to understand what is said.



21. Mrs J's first drawing from imagination.
Except for difficulty in using verbs,
Mrs J. had recovered from her stroke.

Mrs J. selected the stimulus drawing of an apple and the head and shoulders sketch of two people with arms entwined. Like the verbs missing from her sentences, action was missing from her drawing. When the therapist asked if she could draw a hand holding the apple, Mrs J. added the arm with open hand, then the jagged lines.



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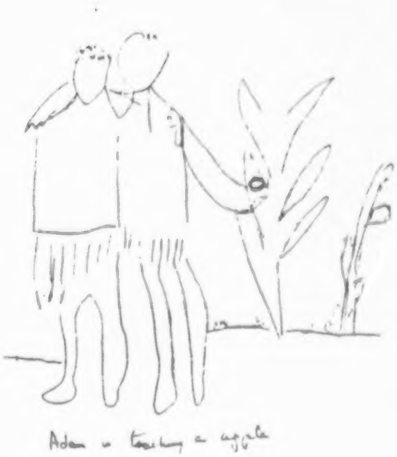
*R. Jakobson, Linguistic typology of aphasic impairments. In A.V. S. de Reuck, Ed., *Disorders of Language*. Boston, Little, Brown & Co., 1964.

22. Mrs J's second Drawing from Imagination, titled, "Adam is touching an apple."

Adam and Eve are drawn full length, the apple (reinforced) in Adam's outstretched hand. Mrs J. also added trees in the background and included a verb in her title.


Adam is touching a apple

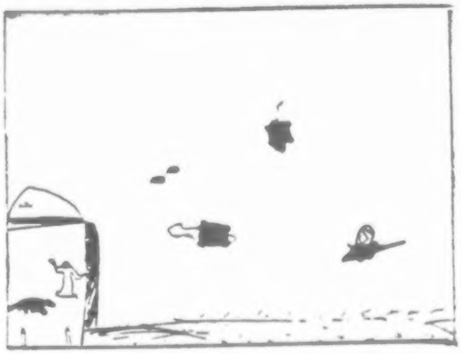
## B. Emotional Content

Responses to the drawing from imagination task can also be scored for emotional content. The emotional projection scale ranges from 1 point (drawings about dangerous or stressful relationships) to 5 points (drawings about caring relationships or achieving goals). Scores of 2 and 4 points are used to characterize moderately negative or moderately positive content, and the intermediate score, 3 points, ambivalent, unemotional, or ambiguous content.

23. First drawing from imaginatilon
Vi, age 8
severe hearing loss and
profound language delay

In his first response to the drawing task, Vi chose the stimulus drawing of an angry man with right arm upraised.

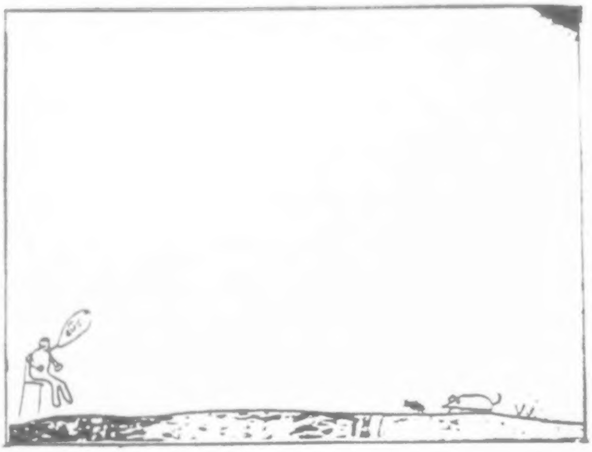
Projection score: 1 point
although most of his drawing is ambiguous, the man seems to be threatening an animal



24. Vi's second art period.

Vi selected the mouse, bug, and person seated on a chair. Leaving most of his paper blank, he seems to have chosen, and copied, subjects which tend to be small and weak, adding his signature at the end of the line.

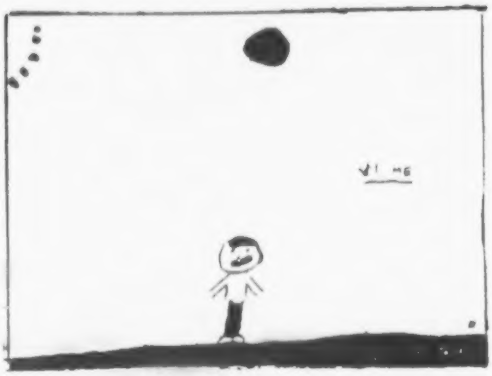
Projection score: 2 points



25. "Vi Me," third period

First painting. When Vi saw yellow and blue mixed on a palette, he exclaimed, "green!" but did not mix colors his own colors. Instead, he used blue for the ground, yellow for his shoes. The missing hands on his self-portrait may reflect feeling helpless, but he is now at center stage.

Projection score: 2 points



26. "Iv," fourth period

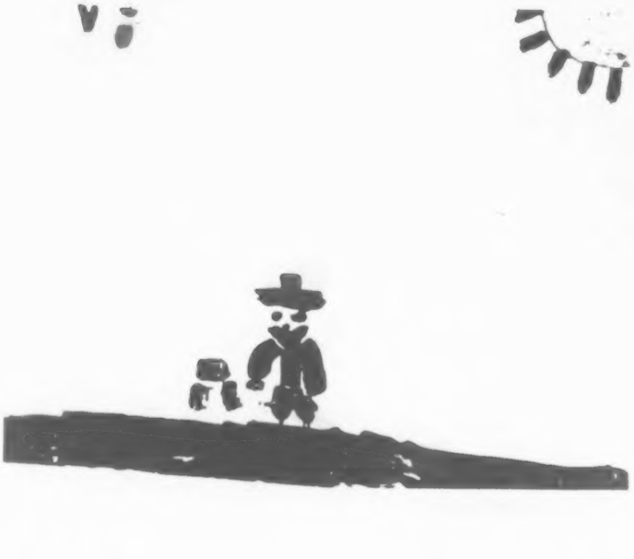
Vi selected the dog, a cat, and tree. Although his name is backward, it is larger than before.

Projection Score: 3 points (ambiguous)

27. Magician, fifth period

As Vi explained, the magician holds an egg which had been inside the hat on the table. Vi mixed colors for the first time - yellow and blue into green for the ground. Perhaps it seemed like magic.

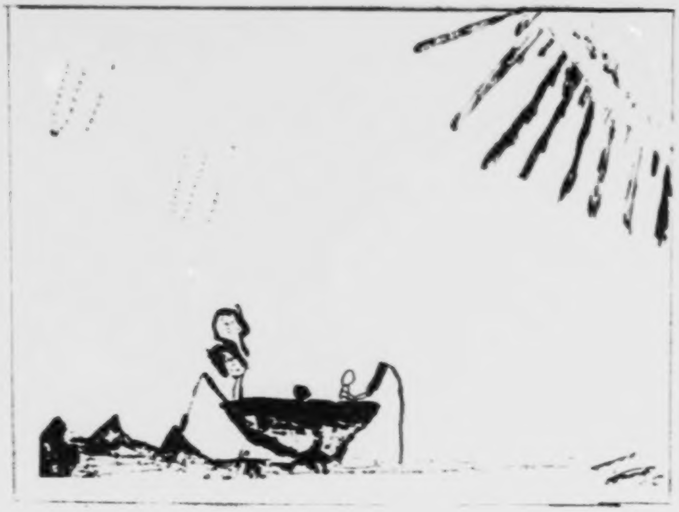
Projection score: 4 points



28. Fishing, eighth period

Vi began this painting by imitating a
classmate's painting in which a boy says,
"I love fishing." A girl says, "Me too."
In Vi's painting, the girl says,
"I got fish." The boy is silent.
The therapist intervened, saying,
"Vi, you don't have to copy Jerry,
you have wonderful ideas of your own."
Vi wrote then his name in the sky
in formations of flying birds.

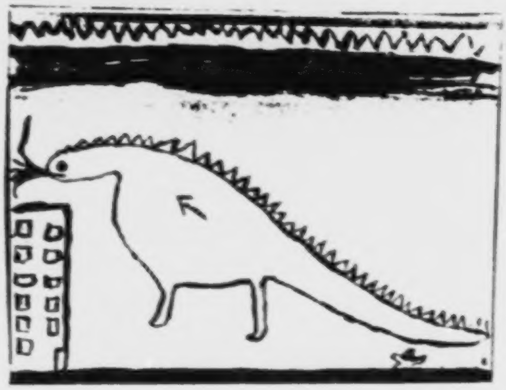
Projection score: 4 points



29. Vi's last painting from imagination

He selected 3 stimulus drawings: boy, dinosauer
and city street. His painting seems to show
someone shooting the dino and rescuing the city.

Projection score: 5 points (achieving goals)



### . Concluding Observations

Although Vi's growth in self-confidence may seem evident, his emotional and cognitive progress became evident in the differences between scores of his first and last response to the drawing from imagination task.

In his first, the Projection score was 1 point, strongly negative, representing a stressful encounter between the man with the club and the animal which seems to be crouching. Vi's other subjects are unrecognizable. In his last response, the Projection score was 5 points, strongly positive. Although it represent another stressful encounter, Vi seem to identify with the boy who shoots the monster and saves the city.

Vi's responses also reflect cognitive and creative growth. His first scored 3 points in ability to select (functional, shows what his subjects do), 2 points in ability to combine (related on the basis of proximity as well as a base line), and 1 point in ability to represent (imitative where recognizable). His last painting presents a well-organized idea with over-all coordination, and is highly suggestive and expressive, scoring 5 points in each category.

The drawing tasks discussed here were subsequently incorporated into the *Stimulus Drawings*, *Silver Drawing Test*, and *Draw a Story* instruments, among the brief summaries of part Two.

## 13. Assessing and Developing Cognitive Skills in Handicapped Children Through Art, 1980

**Co-authors: Claire Lavin, Ph.D, Eldora Boeve, M.A., Karen Hayes, M.A., Judith Itzler, M.A., ATR, Jo-Ann O'Brien, M.A., ATR, Niru Terner, M.A. , Phyllis Wohlberg, M.A., ATR**

This project was supported by a grant from the National Institute of Education, and received the 1980 Research Award from the American Art Therapy Association

The project's report is summarized because it is too long for reprinting (46 pages) and is available from the ERIC Document Reproduction Service (ED #209 878).

## Summary of National Institute of Education Project Report # G 79 0081, 1980

The project had four objectives:

1. to improve significantly the ability of an experimental group of disabled children, to form concepts of space, order, and class inclusion (selecting, combining, and representing)

2. to determine the relationship between scores on traditional tests of intelligence with scores in predictive drawing, drawing from observation, and drawing from imagination. These three drawing tasks, discussed in previous reprints, subsequently became the *Silver Drawing Test of Cognition and Emotion* (*SDT*) first published in 1983, and revised in 1990 and 1996.

3. to determine whether improvement in concept formation would transfer to achievement in reading and mathematics

4. to determine whether children in specific settings make significantly greater gains than children in different settings.

### Subjects

Administrators in six school were asked to nominate 35 children legally designated as learning disabled, emotionally disturbed, hearing-impaired, or at least one level below grade level in reading or arithmetic. The children were drawn from two special schools and four schools for normal children as well as children with special needs. From this pool, children were selected on the basis of their scores in responding to the three drawing tasks.

As originally planned, the only children who would participate in the study, would score at least three points (of the maximum five points) in Drawing from Imagination. As happened, however, it was necessary to include many children with lower scores in order to find as many as 20 children in each school.

The 120 children selected were randomly assigned to experimental and control groups, 10 children in each group in each school. During the course of the program, a number of children were lost. Some had moved or were unavailable for post-testing. All subjects in the school for deaf children had to be eliminated when it was discovered that 6 of the 10 children in the control group were in a training program based on the same Piagetian concepts that were the focus of our study. The final number of subjects totaled 84 children, ages 7 to 11, in five schools.

## Procedures

Before and after the art program, the 84 children in experimental and control groups responded to the three drawing tasks. Their responses were scored on the 5-point rating scales by the six art therapists who were also co-authors of the project report.

To determine scorer reliability, the art therapists participated in a series of training sessons. Subsequently, they scored responses to the drawing tasks by children identified only by number.

**Reliability:** The results indicated a high degree of inter-rater reliability. The judges assigned similar ratings to the drawings in all categories, as shown below.

| Inter-rater Reliability Coefficients for the *Silver Drawing Test* | |
|---|---|
| Drawing from Imagination | .98 |
| Drawing from Observation | .91 |
| Predictive Drawing | .93 |
| Aptitude | .97 |
| Language | .88 |

**Testing.** The children also responded to traditional tests of mental ability, reading, and arithmetic. A series of product moment correlations were used to determine relationships between the drawing tasks and the traditional tests.

The significance of differences in the pre- and posttest performance of experimental and control groups was examined using two way analyses of variance for repeated measures. The criterion measures were the *Otis Lennon Mental Ability Test, the Metropolitan Reading and Arithmetic Tests,* and the three drawing tasks that became the *SDT* subtests. The tests were administered before and after the art therapy program. The severity of the handicaps of some children precluded administration of the *Otis Lennon* and *Metropolitan* tests. In these classes, the children's scores on comparable instruments in their school records were used instead.

In addition, the *SDT* subtests and the *Canadian Cognitive AbilitiesTest* were administered to a class of Canadian children by Norma Ott, a remediation teacher who had attended a workshop and volunteered to participate in the program. Supervised via correspondence and telephone, she worked with one learning disabled child. This opportunity to examine the validity and transportability of the *SDT* and therapy procedures is reported in the following reprint (Identifying Gifted Handicapped Children through Their Drawings, #14).

## The Art Therapy Program

In each school, an art therapist worked with two groups of five children for approximately 40 minutes a week for 12 weeks. The art therapists attended monthly supervisory meetings to discuss the program. The children in the control group received no special treatment.

The program was designed to to develop ability to form concepts of space, sequential order, and class inclusion (selecting, combining, and representing). Developing creative abilities and building self-confidence were also of much concern. We emphasized exploratory learning rather than instruction, and limited art materials primarily to drawing, modeling clay, and painting.

During the first six weeks, all art therapists used the same procedures, following guidelines that specified objectives, procedures, and materials.

During the second six weeks, they adapted the basic six-week program to meet the needs of individual children. In addition, they devised procedures of their own.

9.

**Results**

**First Objective:** The experimental group improved significantly in total scores between pre- and posttests at the .01 level. No other differences were significant. On the *Otis Lennon* test, the experimental group failed to demonstrate significantly higher posttest scores than control subjects.

**Second Objective:** The relationships between the tests under consideration were moderate, with variations between subtests and among traditional tests.

**Third Objective:** The experimental subjects failed to score significantly higher in the reading and arithmetic posttest as compared to control subjects.

**Fourth Objective:** Although no significant differences between the specific settings were found at this time, they were found when the results were reanalyzed, as discussed in the Postscript to this report.

**Case Studies**: Case studies of individual children were presented by each art therapist, providing information that eluded quantification. Although the gains made by some children were not reflected in their posttest scores, they were evident in gains in their classroom behaviors.

**Discussion**

Three previous studies had found significant gains in cognitive skill following experimental programs within similar time periods. In the present study, the experimental groups again improved significantly, but although their gains were higher than control group gains, they were not significantly higher.

How can these differences be explained? It may be that children in the present study were a more diversified group than those studied previously, and some were so severely impaired that to expect them to show gains within a 12-week period was unrealistic.

Many of the children nominated by school administrators were also slow learners. It is possible that these children do not benefit from art experiences as a substitute for language because they are not language-impaired. Rather, they may have a generalized low functioning which does not improve as a result of techniques designed for language-impaired populations.

It had been our intention to select children scoring at least 3 points in Drawing from imagination, but because few achieved these scores, the experimental group included children who were not as strong in visual-spatial thinking as initially planned.

Our results indicated variability among the schools included in the study. This may have been caused, in part, by the fact that the first six weeks of the program were standardized and tightly controlled whereas the second six weeks were flexible. In addition, the time available for art periods varied between 40 to 60 minutes.

In the 3-month time span of the study, it is not surprising that the experimental group as a whole did not improve significantly in reading and arithmetic. Even children with normal intelligence would show only a slight change within 12 weekly art periods. It may be that the art program must be expanded beyond 12 sessions if a different impact is to be observed.

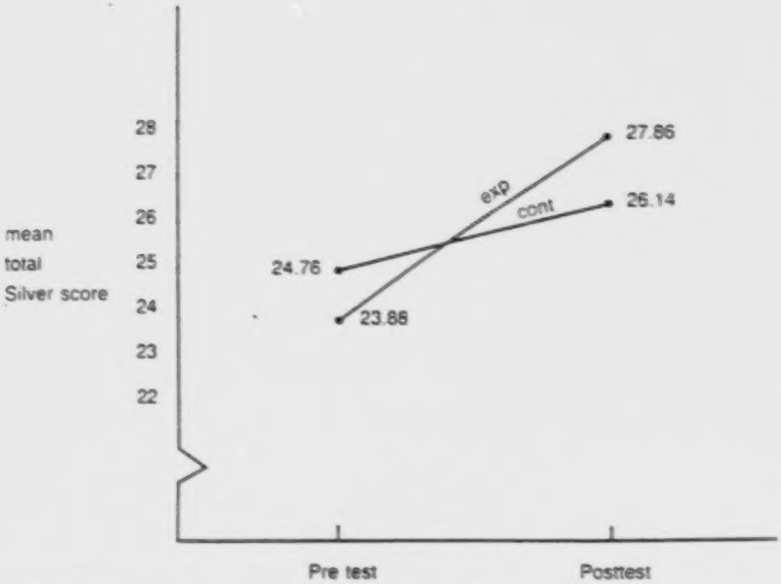
it was surprising that some children in the experimental group made substantial gains in IQ, arithmetic, or reading or classroom behavior, as specified in the case studies and the reprint that follows. This finding suggests that further investigation would be worthwhile .

The results of the testing program indicate that there is a relationship between the drawing tasks and traditional tests of intelligence and achievement. Although modest, it indicates that they are measuring cognitive skills. As such, it can serve as an instrument for identifying children who have cognitive skills that escape detection on traditonal tests. It also seems to explain why, when we give the *SDT* to handicapped children, some do well, although they do not do well on traditional measures - we are using visual rather than verbal media to tap these skills.

## Postscript

After the program ended, the *SDT* scoring guidelines were modified and tightened, and all test booklets rescored blindly. The scores were then reanalyzed as shown in the graph below. Although virtually the same results were found, a school-by-school analysis of net change scores (pretest minus posttest scores) showed significant differences in one school, the school for children with learning disabilities. In this school, the gains of the experimental group were significantly higher than the gains of the control group. Judith itzler, ATR was the art therapist who worked with students in this school. In each school, however, there were individual children who made dramatric gains in all test scores.

**Mean scores of experimental and control groups on pre- and posttests in five schools**



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* Both posttest scores differed significantly from pretest scores ($p < .05$). In addition, the experimental group's posttest scores differed significantly from the combination of the other three groups of scores. Analysis and Figur. prepared by John Kleinhans, PhD

# 14. Identifying Gifted Handicapped Children through Their Drawings

*ARTherapy, Journal of the American Art Therapy Association*, Vol. 1, No.1, 1983

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originally published in *ARTherapy: Journal of the American Art Therapy Association*.

*Rawley A. Silver, EdD, ATR has conducted three research projects on art and the handicapped, supported by the U.S. Department of Education, the National Institute of Education, and the New York State Department of Education. Parts of the following article are excerpted with permission from the manual of* Silver Drawing Test of Cognitive and Creative Skills, *published by Special Child Publications, Seattle, Wash., Copyright © 1983.*

This study explores the question whether a drawing test can be useful in identifying children who have intellectual abilities that escape detection on traditional tests of intelligence or achievement. Two such children are considered: Joey, 8, learning disabled; and Alan, 14, an "average" student.

In the test under consideration,[1] drawing takes the place of language as the primary channel for receiving and expressing ideas. Stimulus drawings prompt response drawings that solve problems and represent concepts.

There are three tasks, designed to assess levels of ability in conceptual, spatial, and sequential thinking—the three areas of cognition said to be fundamental in mathematics (Piaget, 1970) and in reading (Bannatyne, 1971; Rugel, 1974; Smith, Coleman, Dokecki, & Davis, 1977).

The Drawing from Imagination task assesses ability to associate and form concepts. When appropriate, drawing responses are also scored for projection of feelings and for language skills. The Drawing from Observation task assesses concepts of space, and the Predictive Drawing task assesses ability to sequence.

In previous studies, the test was used to assess the abilities of children and adults who were language-impaired, hearing-impaired, learning disabled, or emotionally disturbed. Norms were developed, and in a pilot study, gifted children showed unusually high scores for their grade levels (Silver, 1973, 1976, 1978, 1982, 1983; Silver et al., 1980; Silver & Lavin, 1977).

Although the drawing test showed significant correlations with 10 traditional tests, a few children with high scores on the drawing test had low scores on the traditional tests. How can this be explained? Did these children have intellectual abilities untapped by the traditional tests? Were their low scores caused by subtle cognitive disabilities? Were they handicapped by emotional problems?

Whitmore (1980) found evidence that gifted underachievers had been confused with learning disabled children when, in fact, their major deficits were feelings of inadequacy. She cited special characteristics that cause the gifted children to be vulnerable: perfectionism (feelings of inadequacy and unrealistic expectations of performance), supersensitivity, deficit social skills, and social isolation.

These characteristics seem to fit one of the children, "Joey."

## Joey

In the 2nd grade, Joey was not succeeding in the classroom. He had particular difficulty with reading and was on a behavior modification program. According to his teacher, "Only for that, I'm afraid he would not have progressed at all."

As measured by the Canadian Cognitive Abilities Test (CCAT), Joey's IQ was 91, below average. Only two of the 24 other children in his class had lower scores.

As measured by the Drawing from Imagination subtest, however, Joey had the highest score in his class, higher than the mean score of 103 2nd graders in the test's normative sample, higher than the eight gifted 4th graders in the pilot study, even higher than the adult sample. Joey scored in the 99th percentile.

To determine the relationship of the drawing test to the CCAT, the scores of the 25 children tested were correlated. On the Drawing from Imagination subtest, significant correlations were found at the .01 level ($r = .50$). On the other two subtests, Drawing from Observation and Predictive Drawing, no significant correlations were found.

Except for Joey, most of the children in his class were approximately as successful in Drawing from Imagination as they were on the CCAT.

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[1] *Silver Test of Cognitive and Creative Skills*, published by Special Child Publications, P.O. Box 33548, Seattle, WA 98133.

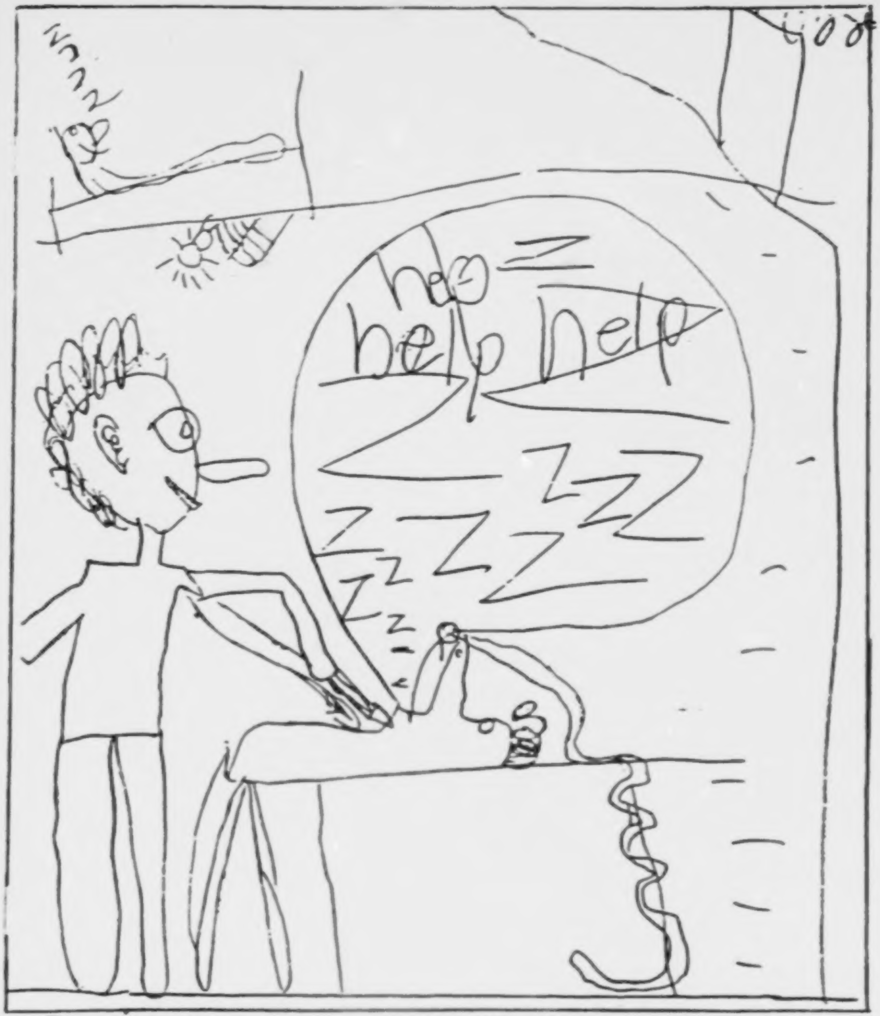

Figure 1.—"The Killier" (sic) by Joey, age 8, Pretest Drawing from Imagination.

The three children with the next highest scores in Drawing from Imagination had IQs ranging between 123 and 150 on the CCAT.

In the Drawing from Observation subtest, however, Joey had the lowest score in his class, well below the 2nd grade norm, placing him in the 14th percentile.

Joey's remediation teacher had offered to help develop norms for the drawing test by giving it to pupils in her school. Then, because she was interested in acquiring new remediation techniques, it was arranged that she would follow the art program of our research project (Silver et al., 1980). Supervised via correspondence and telephone, she worked with Joey individually once a week for 12 weeks.

While the art program with Joey was in progress, the CCAT was again administered, as it was once a year in his school. Joey's score increased 8 points, from 91 to 99.

### Joey's Drawings

Joey's pretest Drawing from Imagination, Figure 1, entitled, "The Killier," (sic) seems to represent a doctor operating on a patient who calls for help even though anaesthetized. Upstairs, someone lies in bed, snoring.

Although Joey did not explain his drawing, it nevertheless provides considerable information about his ability to form concepts. It is recognized that impairment of this ability underlies maladjustment and language disorders. Forming concepts involves making selections, associating them with past experiences, and combining them into a context, such as selecting words and combining them into sentences. Selecting and combining are the two fundamental operations underlying verbal behavior, according to the linguist, Ramon Jakobson (1964). They are also fundamental in drawing—selecting subjects and combining them into images.

In the Drawing from Imagination subtest, the task is to select two subjects, one from each page of the test booklet, combine them into a narrative drawings, and give the drawing a title. Children are encouraged to change the stimulus drawings and to add other images of their own.

Joey's response drawing does more than simply show what his subjects do, the functional level typical of 8-year olds. It indicates that he selected subjects at the conceptual level, on the basis of an imaginative, well-organized idea that implies more than is visible.

His drawing shows that his ability to combine goes beyond the base line level, also typical of children his age (someone is upstairs). Furthermore, his ability to represent goes beyond imitating or restructuring the stimulus drawings of the test booklet. His drawing is original and expressive, representing feelings of intense distress and suggesting that he identified himself with either the victim, the sleeper, or the "Killier."

Joey's pretest Drawing from Observation, Figure 2, provides consid-

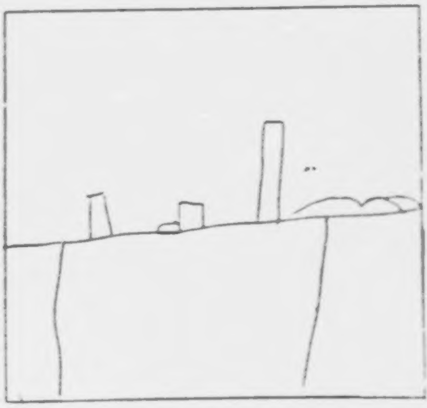

Figure 2.—Pretest Drawing from Observation by Joey.

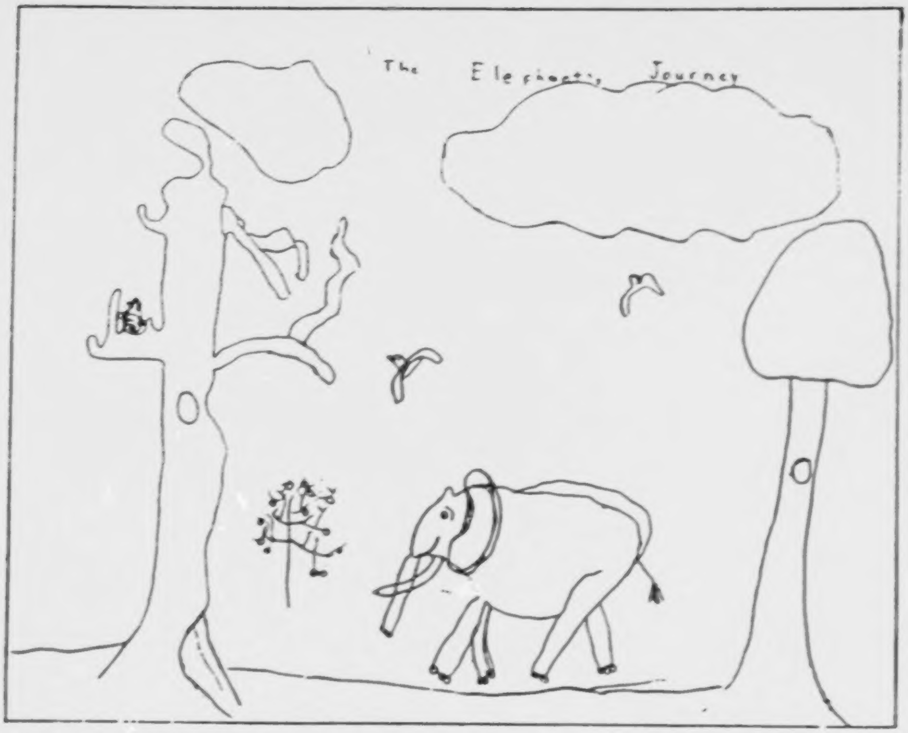

Figure 3.—"The Elephant's Journey," by Joey.

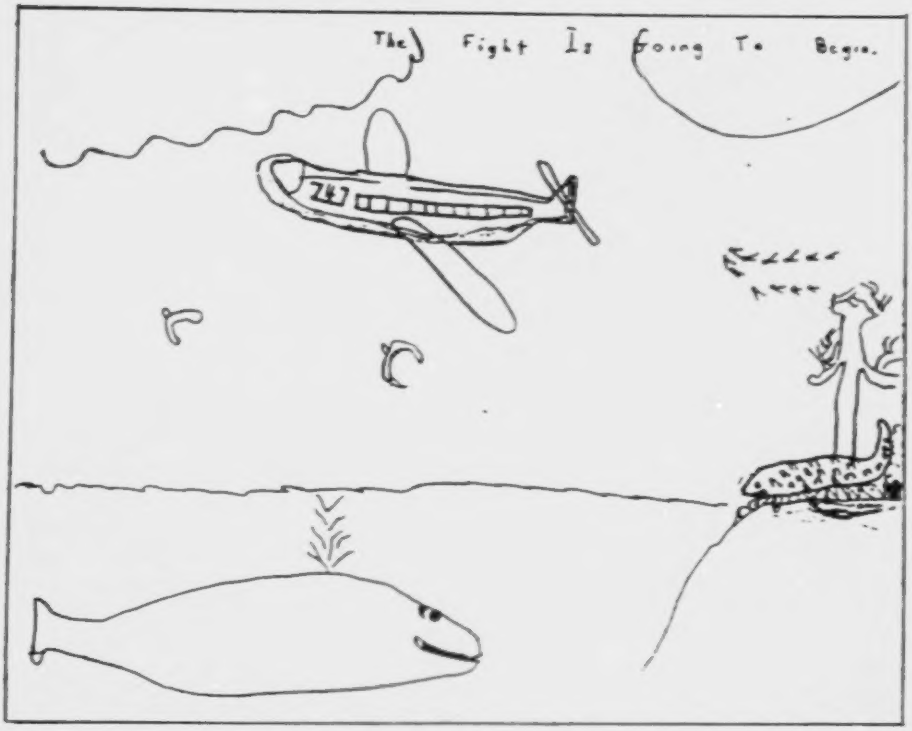
The Fight Is Going To Begin.
747

Figure 4.—"The Fight is Going to Begin," by Joey.

erable information about his spatial thinking. In this subtest, the task is to draw an arrangement of three cylinders differing in height and width, and a stone. Joey's response shows only one of the objects in the correct position—the tallest cylinder on the right. He confused all the left-right and above-below relationships, and failed to show any depth in his drawing although two objects in the arrangement were, in fact, in the foreground and two, in the background. Most 8-year olds can perceive and represent accurately these left-right (horizontal) and above-below (vertical) relationships although they often miss front-back (depth) relationships, drawing all objects in a row. Consequently, Joey's score in the 14th percentile, in Drawing from Observation, strongly suggests that something is wrong.

The art program begins with drawing from imagination, selecting stimulus drawings (different from those in the test booklet and now presented in groups according to category).

Joey selected an elephant and a tree—an old gnarled tree with a small young tree at its side, then drew "The Elephant's Journey," Figure 3. Although the elephant is under a cloud, it smiles. Birds are nesting or on the wing, and the feeling projected suggests hope for pleasant things to come, perhaps a metaphor for the new art class.

With time for another drawing in his first art session, Joey selected a whale and an alligator, then drew, "The Fight is Going to Begin," Figure 4. The whale and alligator confront one another, the alligator (and another old tree) on land, the whale (smiling) at sea, with birds and a 747 in the air. This drawing suggests that Joey was having second thoughts about the art program.

The following week, Joey drew "The Bear Chased them Amay" (sic), Figure 5. An unsmiling bear stands between two trees, one behind him, the other in front. The trees seem to hold back the sun as they hold back the bear. Facing the bear on the other side of the tree is a red car with a yellow flag, black wheels, and blue roof lamp, suggesting a military or police car, and above the car is a dark blue cloud. Only the car, cloud and sun (yellow) have colors, and they are colored in heavily with many strokes of a fine point, indicating that they were of much concern. Joey's title suggests a wish, contradicted by a drawing that projects feelings of isolation and frustration.

The next session of the art program called for painting (mixing tints

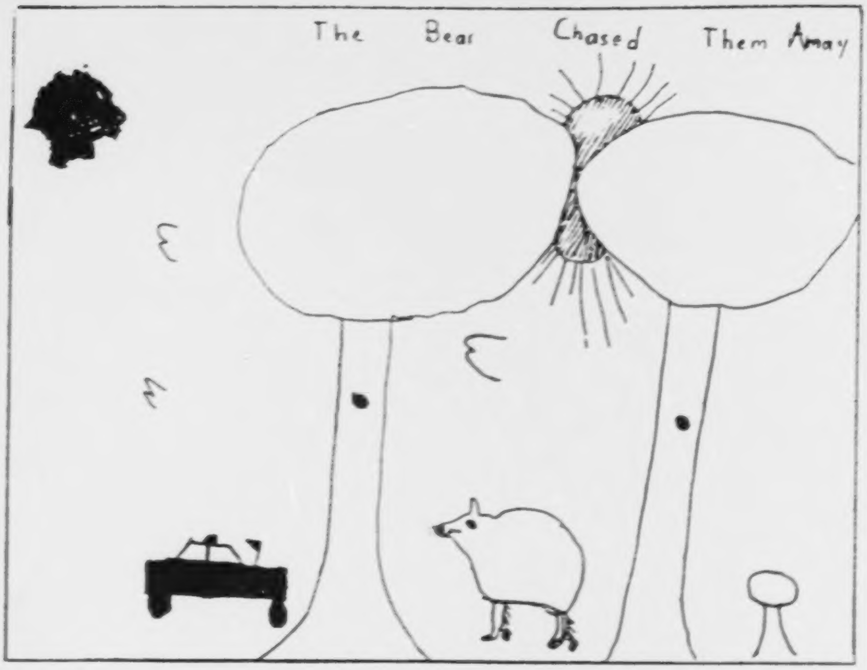
The Bear Chased Them Amay

Figure 5.—"The Bear Chased Then Amay," (sic) by Joey.

and secondary colors, then painting from imagination). Painting was followed by drawing from observation (an orange and a roll of construction paper at first, an apple was added, n a toy landscape). The following sessions included clay modeling, family portraits, and self-portraits[2] (Joey drew himself smiling.)

Joey's remediation teacher, Miss A, reported that even though he was "still struggling with objects in space," his classroom teacher had said, " 'You have Joe all turned on these days,' 'so he is thoroughly enjoying his experiences'." She felt that he had "improved almost 100%." Previously she had described him as "lashing out at his peers, sometimes justified but often uncalled for." As seen from an adult's point of view:

> Deep within, I believe Joe is hostile because he cannot express his very average abilities in our educational system. As I recall, his performance on the WISC-R was one in which the Performance IQ was superior to the verbal, thus Joey's dilemma, to exist in a school system which depends highly on the verbal component of the WISC-R.

Before a week had passed, however, a series of unhappy events began to unfold. Miss A, reporting on his ninth art session, wrote that she was not pleased with the results, "perhaps the answer lies in the fact that his regular teacher threatened him with missing the art lessons because of some misbehavior on his part." Joey's teacher carried out her threat, cancelling two lessons. Then Miss A became ill, postponing their 10th meeting for 5 weeks. With only 2 weeks before the end of the school year, she provided a final session in drawing from imagination, then administered the posttest.

After the summer recess, two letters addressed to Miss A went unanswered. Then, on learning that her telephone number had been assigned to someone else, I wrote to the school's principal who replied that Miss A had died.

Since then, inquiries about Joey's progress in school have produced meager results: when the CCAT was administered the following year, Joey's score dropped to 90 from 99 the previous year (during the art program), and 91 the year before the art program. Thus there is some evidence (the 9-point gain) that the art program was beneficial to Joey.

More substantial evidence is provided by Joey's posttest drawings. His Drawing from Observation shows the objects in the arrangement in the correct positions, horizontally, vertically, and in depth, even though discriminations are crude, Figure 6. This drawing scored in the 85th percentile, a dramatic gain from the 14th percentile score of his pretest response.

His pretest Drawing from Observation suggests that Joey may be suffering from deficits in visual perception or memory. These could also explain why he confused "m" and "w" in his title for Figure 5, reversals characteristic of learning disabled children. Although Joey's posttest drawing shows considerable improvement, there is no way to know if there was any carry over to other school learning, particularly reading and writing.

In his posttest Drawing from Imagination, "The Dog Chasing the Cat," Figure 7, there are several noteworthy changes. The pain (inflicted and suffered) in his pretest drawing, is gone. Although the cat is

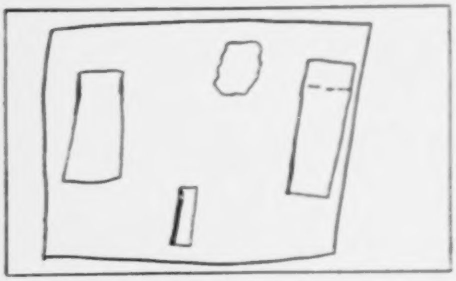

Figure 6.—Posttest Drawing from Observation, by Joey.

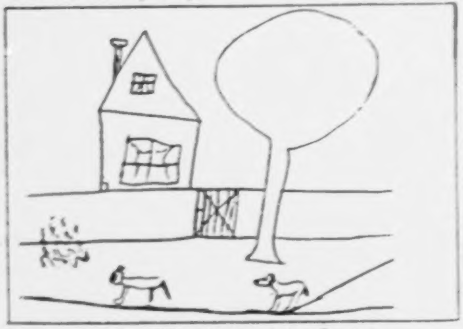

Figure 7.—"The Dog Chasing the Cat," by Joey, Posttest Drawing from Imagination.

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ther information about the art program may be obtained from the author at 1600 Harrison Avenue, Suite 105A, Mamaroneck, NY 10543.

being chased, it does not seem very unhappy compared with the man on the operating table in Figure 1. Thus one change is in Joey's Projection score, no longer the expression of intense feelings of distress.

Another change is in the form of the posttest drawing: a house is in the background, a wall in front of the house, a tree in front of the wall, and the chase carried on in front of the tree—spatial concepts that are unusual in drawings by 8-year olds. Thus Joey's score in Ability to Combine improved.

A third change reduced his score in Ability to Select. In this drawing, Joey seems to have selected the dog and cat on the functional rather than conceptual level, simply showing what they do. Furthermore they seem static compared to his dynamic pretest drawing. Thus Joey's gains in spatial concepts were offset by losses in content and creativity. He scored in the 91st percentile in his posttest Drawing from Imagination, down from the 99th percentile in his pretest Drawing from Imagination.

Was a decrease in spontaneity and expressiveness the price that was paid for gains in spatial skills? The only further evidence available is in Joey's last drawing from imagination, produced the week before the posttest was administered.

"Seeing an Elephant in the Woods!" Figure 8, was produced in the 10th and final session of his art program. Joey had selected the stimulus drawing of a young mountain climber wearing a backpack. In his drawing, however, the climber is elderly. He climbs a tree looking for the elephant in the wrong direction and wearing dark glasses. This drawing resembles Figure 5: the bear is now an elephant and the cloud extends across the sky. Once again, Joey's title contradicts his drawing: the man could *not* see the elephant, and as though to reinforce the contradiction, the elephant would be hidden from the airplane as well. The trees would hide it from view even if the plane had windows.

Scored in the 99th percentile, this drawing received the same score as his pretest Drawing from Imagination, suggesting that Joey's spontaneity and expressiveness were still intact, and that he was still burdened with feelings of frustration, isolation, and inadequacy. Even Miss A had low expectations, referring to Joey's "very average abilities." These expectations may have blinded her to his true potential and blocked her kind intentions as the trees in his drawings blocked the sun and hid him from view.

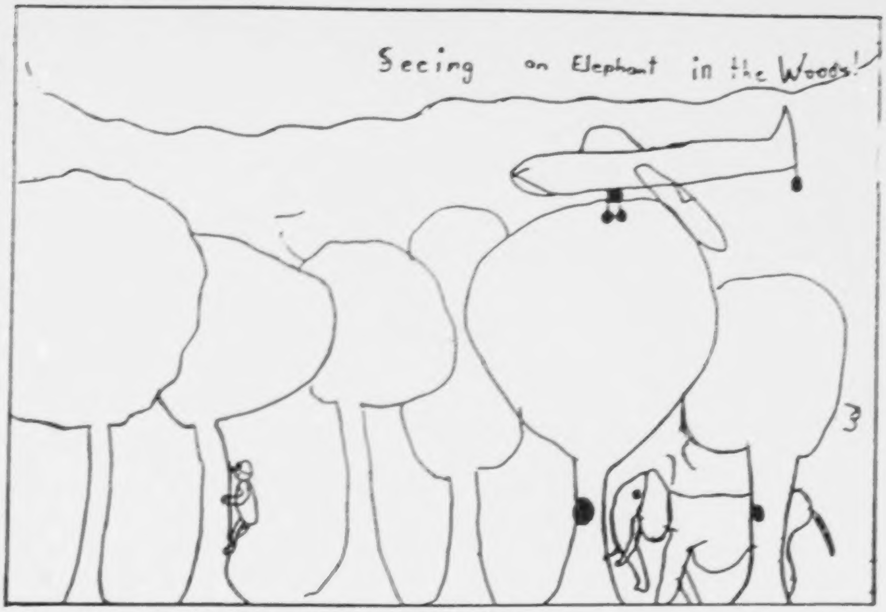

Seeing an Elephant in the Woods!
3

Figure 8.—"Seeing an Elephant in the Woods," by Joey.

## Alan

Alan, 14, took the drawing test when it was administered to his class in order to develop 8th grade norms. The 21 children in his class were the total number of 8th graders in his school, a small public school in an urban, low to middle socioeconomic neighborhood. Scores on the test were then compared with scores on the two achievement tests used by this school, the Iowa Test of Basic Skills (reading and math) and the California Achievement Test (CAT) (reading only). These tests had been administered by school personnel at the beginning of the school year. On the Iowa, Alan scored at the 8th grade 7th month level (8.7); on the CAT, at the 10th grade level (10.0).

Compared to the scores of his classmates, Alan's scores were just below the mean for his class on the Iowa, and somewhat above those on the CAT. Thus he seemed about average in intelligence for an 8th grader.

On the drawing test, however, Alan had the highest possible score, and so far he is the only person tested to have the highest possible score.

The drawing entitled "Possessed," Figure 9, is Alan's response to the Drawing from Imagination subtest. He selected a man and a knife, then made a sequence of drawings. In the first, a devil speaks to someone lying in bed, saying, "Come." Then, the person in bed becomes possessed by the devil, saying, "Get out" as he faces a man who calls him "son," repeating "get out" as he wields the knife. Next, he looms over the man who lies stabbed, and finally vanishes as the words, "Be gone" issue from a cross.

This drawing, highly imaginative in both form and content, also represents violence, injury, and danger, which are scored for Projection, like Joey's pretest Drawing from Imagination. A single such drawing may represent only a passing mood. Repetition, however, suggests a need for clinical follow-up and verification by other methods. Alan did produce another such drawing, but consider first, drawings by the two students with the highest scores on the CAT and Iowa tests, Max and Sarah.

**Max**

Max scored at the 11th and 12th grade levels on the Iowa (11.0) and on the CAT (12.9). He also had a high score in Drawing from Imagination. Selecting a bride and a mouse as his subjects, he produced, "Panic in a Church" (Figure 10). Like Alan's, his drawing is imaginative and represents intense feelings of unhappiness but there is a crucial difference: Max does not seem to identify himself with the suffering bride (groom?). He seems to be enjoying her embarrassment. Alan, on the other hand, seems to identify himself with the person possessed.

**Sarah**

Sara scored at the 11th grade level on the Iowa (11.0) and on the CAT (11.7). In Drawing from Imagination, however, she did not have a high score, and her total score on the three subtests was slightly below the mean score for the class.

Sarah's drawing from imagination, entitled, "Going to the Malt Shop," Figure 11, is descriptive rather than imaginative. She seems to have selected her subjects (a girl and an ice cream soda) at the functional level—what they do or what one does with them—and represented an event that lacks the creativity and expressiveness of the drawings by Max and Alan. In projection, her associations were with a happy situation. She seems to identify with the girl to whom good things happen.

Why was Sarah's score low in the drawing test and high on the Iowa and CAT? Why did Max have high scores on all three tests? Why did Alan have high scores on the drawing test but moderate scores on the other two tests?

One possible explanation is that Max is strong in both visual and verbal thinking, the so-called left and right hemisphere skills; Sarah is strong in verbal thinking (high scores on the CAT and Iowa tests), weak in visual thinking (in the 44th percentile in the Drawing from Imagination subtest); Alan, is strong enough in verbal thinking to score at and above grade level on the CAT and Iowa tests, but his unusual skills in visual thinking are overlooked by these traditional, language-oriented measures.

Another possible explanation is that Alan is handicapped by emotional conflicts while Max and Sarah are well-adjusted. Reports in Alan's school file indicate that his mother had remarried when he was in the 4th grade, and that Alan had difficulty adjusting to his new family situation. His mother felt that this was the reason for his poor progress in the 4th grade, and in the years since, his progress remained poor. One teacher reported that he worked in spurts. Another reported conferences with his parents to discuss his work habits.

A week or so after taking the drawing test, Alan was asked to make another drawing from imagination,

Figure 9.—"Possessed," by Alan, age 14.

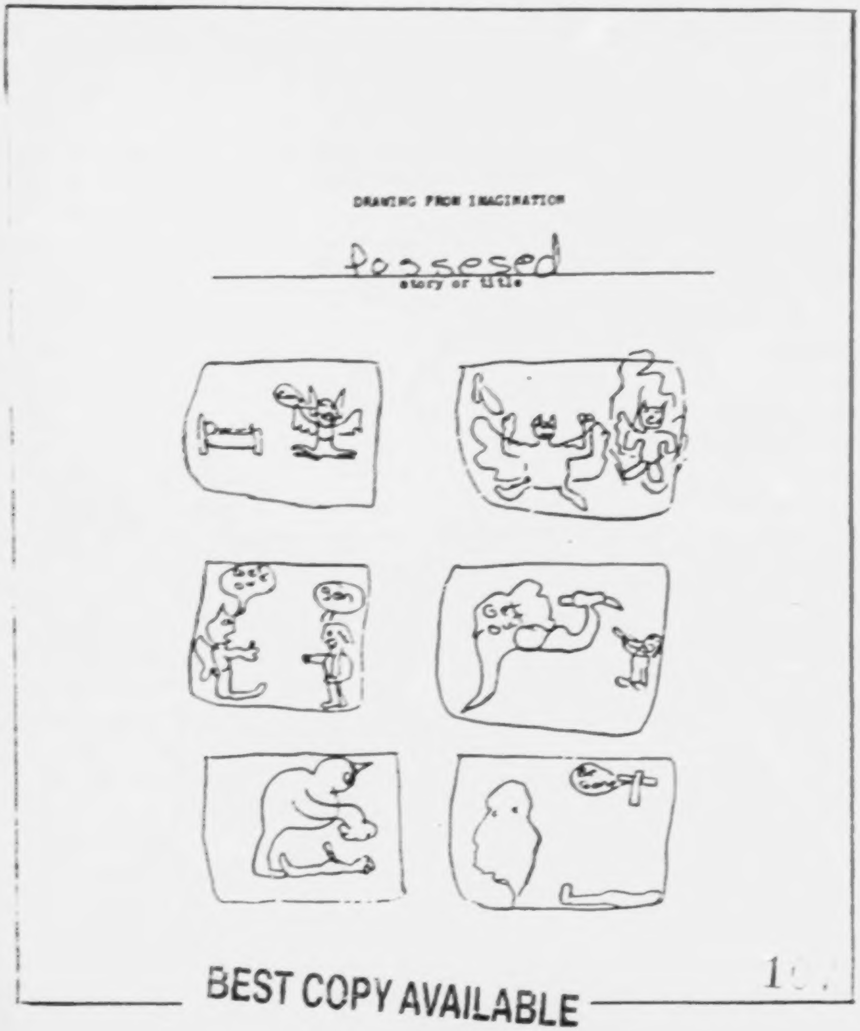
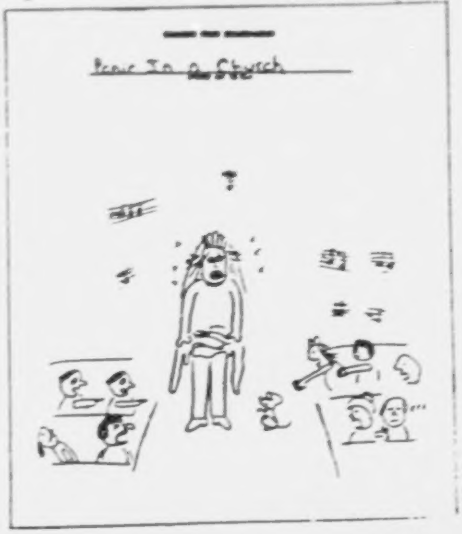


Figure 10.—"Panic in a Church," by Max, age 13.



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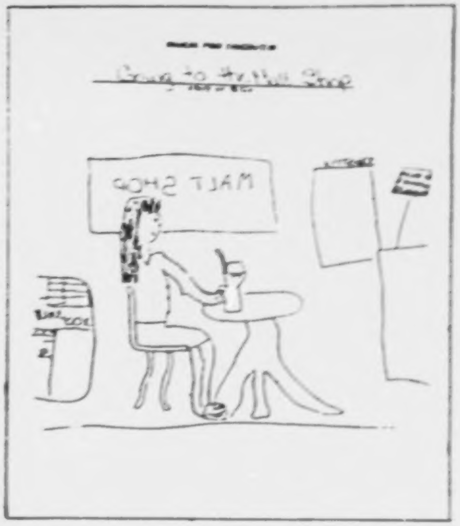
Going to the Malt Shop
MALT SHOP

Figure 11.—"Going to the Malt Shop," by Sarah, age 14.

using the stimulus drawings rather than the test booklet. Again he drew a series of events, entitled, "Murder," Figure 12. It starts with a bank hold-up, two people are shot, a robber escapes, is wanted for murder, is caught, handcuffed, and electrocuted. Alan's repeated fantasies about murder and punishment suggest preoccupation with emotional problems, which could explain, in part, why Alan may be a gifted underachiever. There was no opportunity for follow-up.

## Conclusion

In order to function well in school, a child must be free from debilitating emotional problems. It is difficult for teachers, administrators, and parents to recognize that a youth like Alan may be gifted but handicapped by maladjustment, or that a child like Joey may be gifted as well as learning disabled. There may be many like Alan, masquerading as an average student, or Joey whose disability masks his true potential, their gifts hidden even from themselves, but manifest in their drawings. Identifying such children could be a useful first step in art therapy.

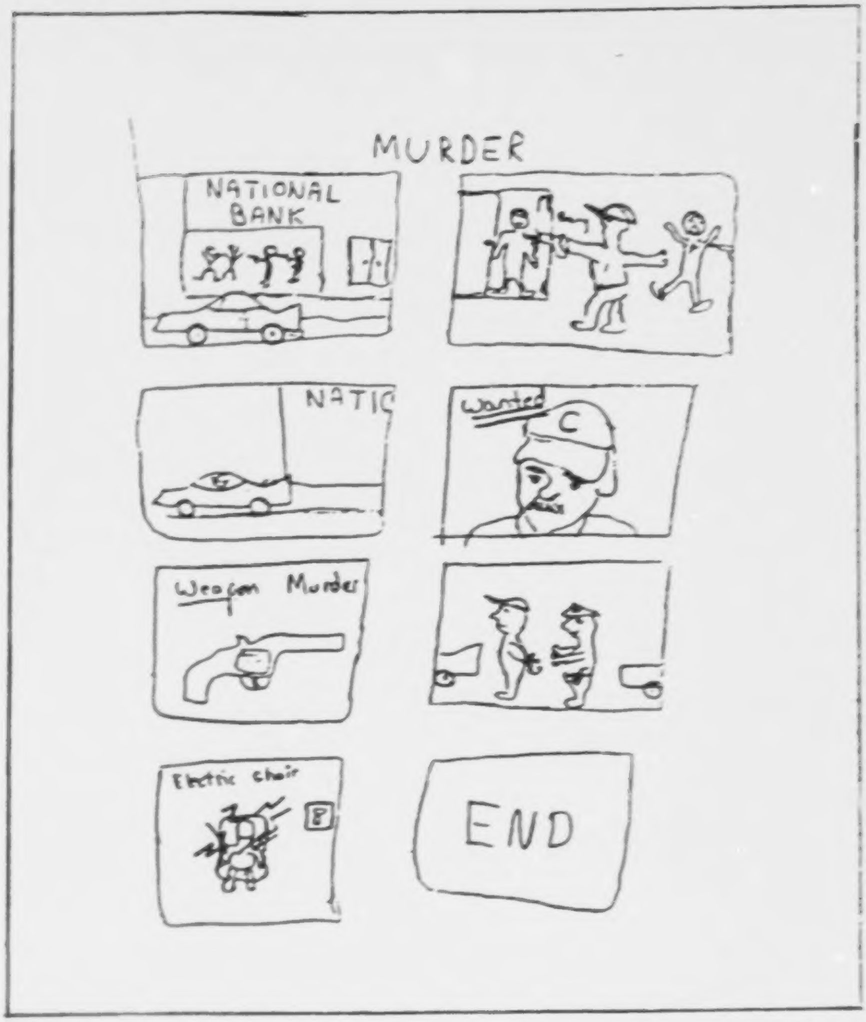

Figure 12.—"Murder," by Alan.

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# 15. The Stimulus Drawing Technique with Adult Psychiatric Patients, Stroke Patients, and in Adolescent Art Therapy

Coauthors Louise Sandburg, ATR, and Kristen Vilstrup, ATR

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## *Part I: The Use of Stimulus Drawings with Adult Psychiatric Patients in a Day-Care Setting*

*Louise Sandburg, MSc, ATR*

## *Part II: The Use of Stimulus Drawings with Stroke Patients in a Rehabilitation Center*

*Rawley Silver, EdD, ATR, HLM*

## *Part III: The Stimulus Drawing Technique as Metaphor in Adolescent Art Therapy*

*Kristen K. Vilstrup, MA*

***Louise Sandburg, MSc, ATR,*** *is Art Therapist at St. Vincent's Hospital, Harrison, New York.* ***Rawley Silver, EdD, ATR, HLM,*** *is author of* ***Developing Cognitive and Creative Skills Through Art,*** *and has additionally authored more than 30 research reports and articles. Other of her works include a drawing test and two exhibitions on art and disabled children and adults (circulated by the Smithsonian Institution).* ***Kristen K. Vilstrup, MA,*** *is Clinical Art Therapist at Shadow Mountain Institute, Tulsa, Oklahoma.*

***The stimulus drawings used in these studies consist of a set of 50 line drawings of people, animals, places and things (Silver, 1982). The drawings are designed to be ambiguous or suggestive in order to facilitate their use in diagnostic or treatment, or both. The technique consists of presenting the stimulus drawings (individually or to groups), asking the patients to choose some drawings, imagine something happening to the subjects chosen, then show what is happening in drawings of their own. When response drawings are finished, they are discussed. The authors (Sandburg, Silver and Vilstrup) adapted this basic technique to the needs of the patients with whom each worked. Stimulus drawings with adult psychiatric patients in a day-care setting, with adult stroke patients in a rehabilitation center, and the technique as metaphor in adolescent art therapy comprise this three-part article.***

## *Part I: The Use of Stimulus Drawings with Adult Psychiatric Patients in a Day-Care Setting*

### Overview

This section presents the use of stimulus drawings over a one year period, with chronic schizophrenic patients at the Preventive Treatment Unit of St. Vincent's Hospital in Harrison, New York. An "Artworks Group" was designed to meet the needs of the lower-functioning patients in the program. The stimulus drawings provided a structured format which offered safe choices while, at the same time, provided enrichment and encouraged socialization.

The stimulus drawings were presented to the patients as a working tool, and the meaning of stimulus was discussed with them. The drawings were displayed and discussed before each of the sessions with the patients; the instructions directed the patients to choose two or three of the stimulus drawings and to think of a story that could include these images. These simple images provided models and also served as a starting point. The instructions remained identical from week to week for the purpose of establishing consistency. Following the instructions, the patients drew a picture from the story that was created (using the stimulus drawing as a motivation). The patients were encouraged to create their own imagery, although they were allowed to copy a stimulus drawing if they felt it was necessary. Copying was most often an issue when a patient first joined the group, and also if a patient was in periods of regression under stress; however, the stimulus drawings helped to overcome fear and resistance, and they helped to decrease comments such as "I can't draw."

The art work was done in a closed room, at a large table that seated eight. 12" x 18" white paper was used, with craypas as the drawing medium. This size of paper, as well as the vivid colors, were chosen to stimulate the patients and to counteract any rigidity that might be present. After completion of the drawing, the art work was displayed on the wall, and in some cases the patients chose to display the cue stimulus drawings with their drawings.

The chairs were moved into a semicircle in order to arrange the patients comfortably in preparation for viewing the completed and collected art work. The therapist encouraged interaction with questions such as "Is there anything you would like to know about one of these pictures?" Each patient was given ample time and encouragement to verbally present his or her own art work.

The structuring of the sessions around the stimulus drawings helped to focus on specific ideas, and it helped to stem the flow of loose associations; it was previously noticed that at time the loose associations overwhelmed the patient and made working in art a threatening process. This group served as an introduction to the creative process for patients who had never before explored art. The art experience was presented as a problem-solving task, thereby making the process more accessible and enticing to those with poor self-concepts. Group cohesiveness was built by encouraging even the most minimal participation. When a patient was feeling particularly stressed and too agitated to draw, he or she would often choose a stimulus drawing and participate in the verbal processing, rejoining the group the following week as a full participant.

The direct involvement in developing one's own art work from the drawings and processing it within the group often brought up therapeutic issues. The processing often moved from the art work itself into aspects of the patient's own life experiences. At times, patients shared these past experiences, discovered peer identification and received peer support. Uncharacteristic affect flexibility and spontaneous humor were periodically observed.

The art work was often cathartic, it served as a source of pride and pleasure, and it provided accomplishments for patients who seldom experienced these positive feelings in their daily lives. The group served as a model for interpersoñal interactions and the stimulus drawings, in turn, often served as the focal point. The drawings also promoted common shared experiences; patients often remembered who had used a particular drawing and they reminded each other of previously chosen stories.

After one year of work with the standardized stimulus drawings, the patients decided to construct their own set of story cards using the collage technique to construct these cards. They took this initiative after having gained much self-confidence in this long-term process, and they used the stimulus drawings as their working models to move (although somewhat tentatively) in more personal directions.

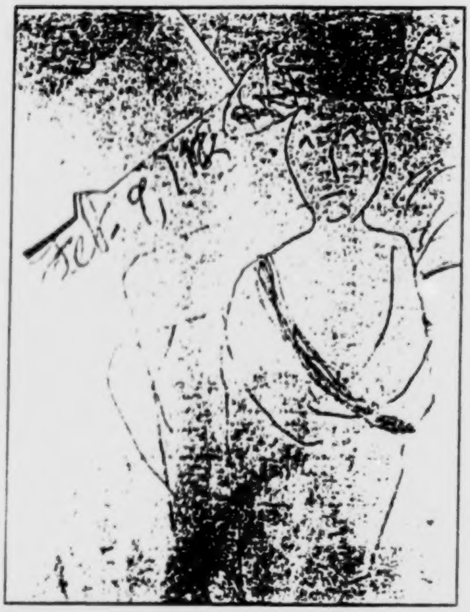

Figure 1

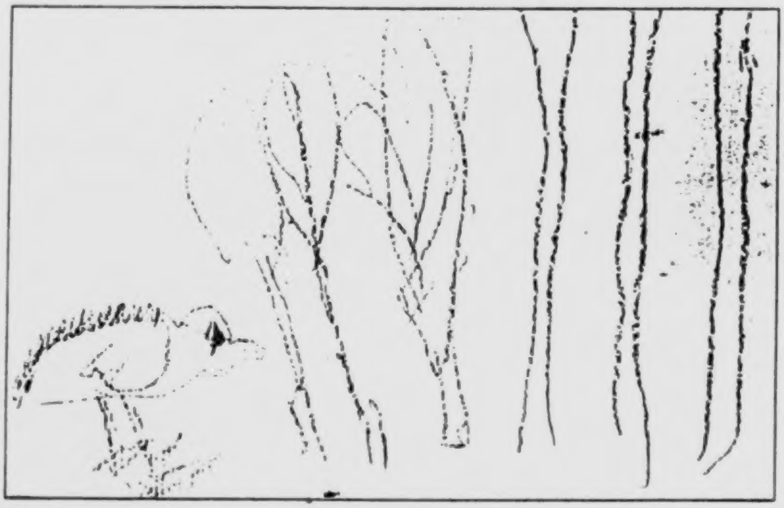

Figure 2

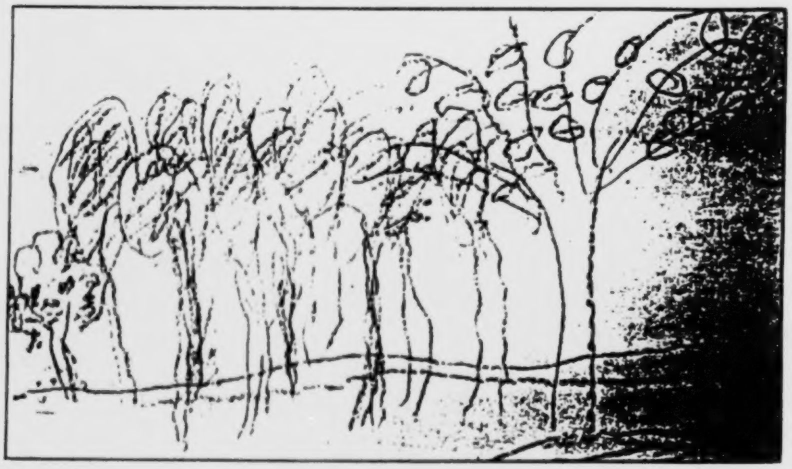

Figure 3

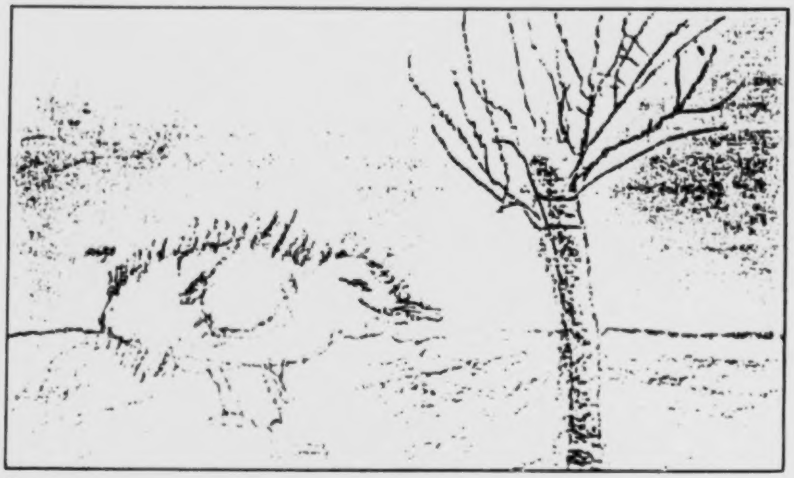

Figure 4

**Case Example**

Ms. A is a 69 year old single, white female diagnosed as hebephrenic schizophrenic, who (despite constant delusions and hallucinations) was usually smiling and cooperative. She had trained as a classical pianist but refused to play the piano anymore. The group served to introduce her to a less conflicted creative outlet. Although her artistic "style" was basic, and limited by the organicity of tardive dyskinesia, her art work reflected her vigor. She took great pride in her work and was pleased when she learned how to use a horizon line to ground her imagery.

The style of Ms. A's first image of a "Queen" (Figure 1) revealed her hesitancy in the new group setting. She was quite involved in the drawing process, physically isolating herself from the group which she later rejoined to proudly discuss her art work. The elaborate hat corresponded to a tumor on her head. Her next picture (Figure 2) was a "Curious Chicken in the Forest" and at this point she used the group to explore her self-experiences. Ms. A's third image (Figure 3) portrayed fall trees, and included a horizon line and multicolors. The chicken, looking smug, reappears in the last drawing (Figure 4) and this image is more complete than in previous work. As she moved through this series of drawings, Ms. A received positive feedback on her progress from her peers as well as support from the therapist. These drawings were done over a one year period where progress in the group helped to promote progress that was noted in other aspects of her treatment.

> ***". . . The stimulus drawings helped to overcome fear and resistance, and they helped to decrease comments such as 'I can't draw.' "***

**Conclusion**

Richard Lamb states that:

> . . . many long term severely disabled psychiatric patients find only emptiness. A positive sense of meaning in life is usually associated with membership in groups . . . as these persons with limited capabilities become older, they have experienced repeated failures in dealing with life's demands and in achieving their earlier goals. (Lamb, 1982)

A need for success within a group counteracts the "common sense of defeat" that Arthur Robbins sees as a trait of schizophrenia (Robbins, 1976). A highly structured group, built around the stimulus drawings, correlates with Sylvia Honig and Kathleen Haynes' findings that identify the need for consistency within the treatment regime when working with chronic patients in long-term settings (Honig, et al, 1982). Helen Landgarten writes about "cooperative task orientation," wherein the sheltered group setting serves as a trial area for interactions that develop socialization skills to be used and further developed elsewhere (Landgarten, 1981). The "stilted styles," also mentioned by Landgarten, are often seen in the art work of patients in day treatment settings. Many of these

> ***"The structuring of the sessions around the stimulus drawings helped to focus on specific ideas, and it helped to stem the flow of loose associations. . . ."***

points were directly applicable to the Artworks Group and to the art produced by the patients within the group. The stimulus drawings within this one year period served as concrete tools for focusing fragmented thinking patterns, and allowed risk-taking in a safe setting.

The Preventive Treatment Unit enriches the quality of life for these chronic patients in treatment. The Artworks Group is only one of thirty different activities available within this structured milieu. The stimulus drawings were the core of this group, serving as communication tools to evoke images from past history, allowing risk taking, and forming the basis for development of social and artistic skills. They served as a stimulus for change for these patients who live with daily deprivation.

## *Part II: The Use of Stimulus Drawings with Stroke Psychiatric Patients in a Rehabilitation Center*

In this study, the stimulus drawings were used for diagnostic and therapeutic purposes with patients who had language impairments as a result of cerebral accidents.

To illustrate, Mr. O, age 56, had a cerebral hemorrhage. Although he spoke fluently, his vocal responses did not always make sense. He could not read aloud and tended to confuse grammar and verb tenses. He also had difficulty following a series of commands, such as "Put the book on the table, and put the pencil in your pocket." His greatest difficulty, according to the medical report, lay in expressing concepts. Although he was discharged from the hospital, Mr. O returned once a week for speech therapy.

As an art therapist, my goals were: 1) to determine whether Mr. O's impairments were cognitive as well as linguistic; and 2) to help Mr. O overcome his difficulties in expressing concepts.

### Diagnostic Information

The stimulus drawings (SDs) were used in conjunction with the Silver Drawing Test (1983) which was administered as a pre-post instrument in the first and last sessions. The objective was to obtain information about his ability to perceive, form and represent concepts nonverbally as well as verbally.

In the pretest Mr. O had no difficulty with two of the three subtests, scoring the maximum 15 points in Drawing from Observation (spatial concepts) and Predictive Drawing (the ability to deal with hypothetical situations). In the third subtest, however, Drawing from Imagination (the ability to select, combine and represent), Mr. O's graphic response was somewhat garbled. This corresponded to, and resembled, his expressive language. This response included two drawings (see Figure 5). The first, titled "A Life Time of Growth," shows stick figures of men, women and children. Although the figures are related by arrows, their meaning is unclear. His second drawing (also in Figure 5) is more meaningful; titled "Cat and Dog Confrontation in a Strange Home," it may reflect his feelings about his hospital experience, or perhaps his feelings about taking the test. His first drawing was scored 5 points; his second, 8 points (from a maximum possible 15 points). Comparing these scores with our norms for children in the second grade, Mr. O's scores were in the 7th and 40th percentiles respectively. In other words, he seemed to be performing at a level that was low for 8 year old children.

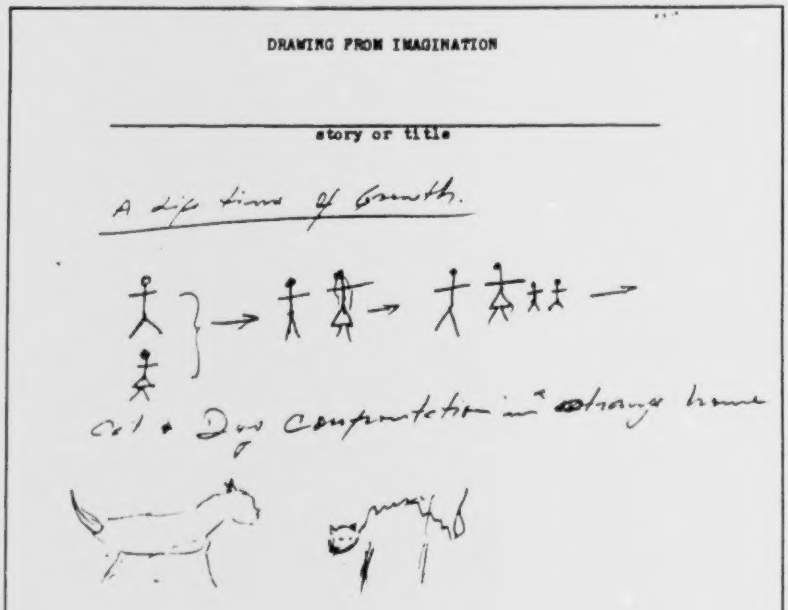
DRAWING FROM IMAGINATION
story or title
A life time of Growth.
Cat + Dog confrontation in strange home

Figure 5

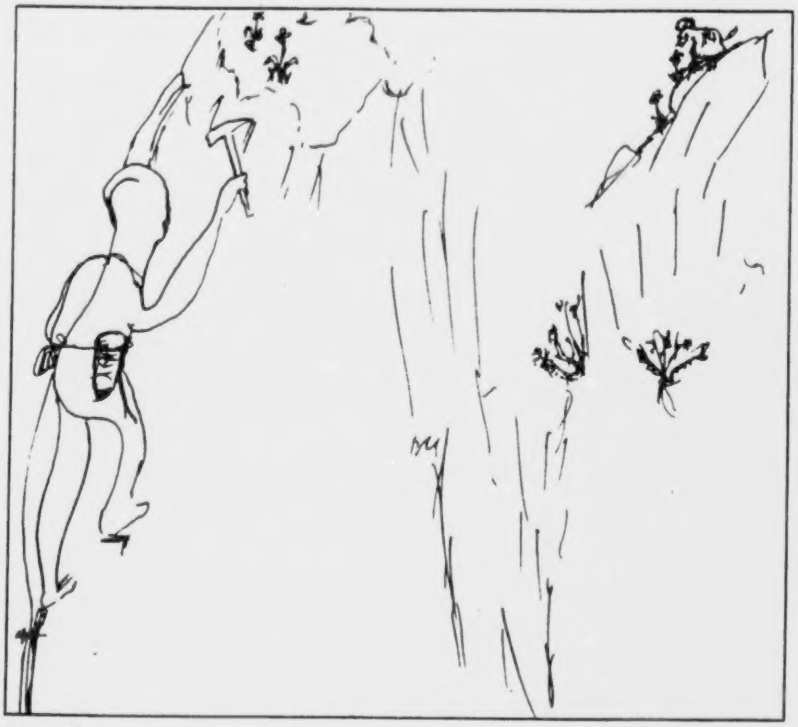

Figure 6

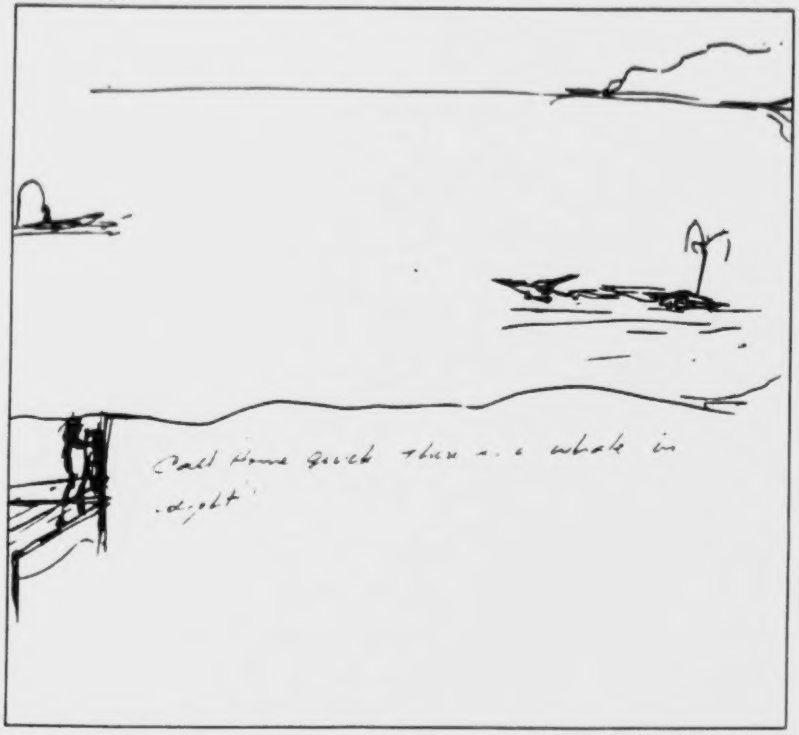
Call Home Quick there is a whale in
sight

Figure 7

Did this low score reflect cognitive impairment or language impairment, or both? To obtain further information, the stimulus drawings were used.

## Therapy

The therapeutic objectives were to encourage Mr. O to express concepts through drawings followed by talk, as well as to provide him with opportunities to ventilate feelings which he could not verbalize. We met in four weekly hour-long sessions.

In the first session the stimulus drawings (SDs) were spread out on the table between us, clustered into two groups: people and animals in one group, places and things in the other. Mr. O chose a mountain climber, then drew Figure 6, which he titled "Gathering Magic Herbs." In Mr. O's drawing the mountain climber was changed from a child into an apparently masculine, faceless adult. Mr. O added the climbing equipment and mountain scenery, showing the climber higher than an airplane and the tree line just below the herbs on the peak. On a neighboring peak, a mountain goat has reached the top and is savoring the rewards. The theme of this drawing seems to be striving to overcome obstacles, with the likelihood of success. Climbing mountains is an appropriate metaphor for trying to regain one's health. This drawing shows no difficulty with forming and expressing concepts, and its upbeat character presumably reflects a need or wish to overcome the dangers and difficulties of his illness. The drawing, scored as though it had been a response to the test, received the highest possible score of 15 points.

Returning to the stimulus drawings, Mr. O selected a whale and a seascape, then drew Figure 7 titled "Call Home Quick. There is a Whale in Sight." In trying to explain his drawing, Mr. O pointed to the person on the dock and said "sing walk walk." I asked if he meant telephoning. He replied "yes," adding that his words "do not come out right." Mr. O then talked about the onset of his stroke.

He had been having lunch with a friend when suddenly he found that he was unable to talk or write. Even so, he said that he was fully aware of what was happening at the time as well as later, when he was in the hospital. His choice of a whale with water spraying from its spout is an interesting metaphor for a cerebral hemorrhage.

The following week Mr. O chose the stimulus drawing of a city street, then he made two drawings: people with crutches and canes (titled "Handicapped People That Can be Trained to New Aspects of Machine Maintenance"), and a drawing of someone walking along dotted lines across city streets (titled "Paths to Learning Machine Maintenance"). Mr. O then talked about his work as an executive in a large company, and he noted that he was planning to return to work soon. Although the subjects of his drawings were handicapped in walking rather than talking, and their work involved maintaining machines rather than communications, they seemed to represent Mr. O in disguise. Like the mountain climber in Figure 6, the figure symbols are overcoming obstacles: they can be trained, they can find the paths through a maze of city streets, and perhaps they can also help him to conquer fears and fulfill wishes indirectly by projecting them onto his surrogates.

At the last therapy meeting the Test was administered again. This time Mr. O's score on the Drawing from Imagination subtest yielded the maximum possible score. This subtest resembles the SD technique in that the examinee is asked to look over a different group of 15 SDs, choose two, think of something happening to the subjects selected, draw what is happening, and add a title. (Directions: "Don't just copy these pictures. You can change them and draw other things, too"). Mr. O chose the snake and the cat, then drew Figure 8, titled "Hedges May Hide Surprises." His snake (in the hedge) faces away from the cat, apparently in retreat. The cat, facing toward the snake, partly resembles the "test booklet cat" in that its back is arched and its tail is raised. Unlike the test drawing, however, Mr. O's cat smiles and its eyes are open.

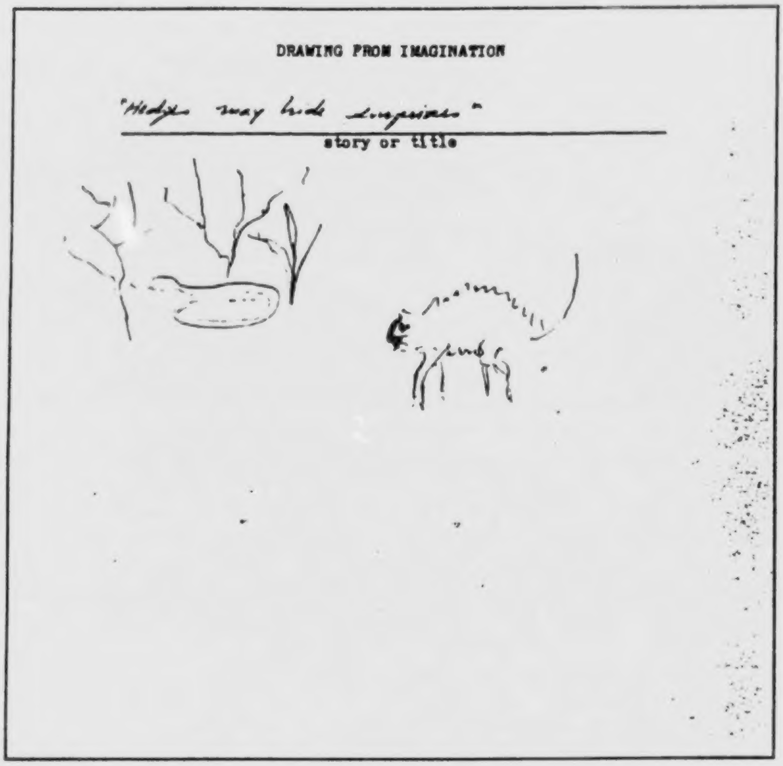

Figure 8

Like the mountain climber and the handicapped people in previous drawings, his cat seems about to achieve success—in this case, mastering an unpleasant surprise.

It may be that Mr. O was preoccupied with his return to work the next day and that the cat represented himself (Mr. O), courageously facing up to and dominating a threatening situation. On the other hand, it may be that Mr. O identified the snake with himself. There was no way to know, and Mr. O offered no explanation; he spent the remaining time saying goodbye.

It seems evident from Mr. O's response drawings and explanatins that his impairments were not cognitive, but linguistic. His drawings also suggest that art experiences provided him with opportunities to express some of the fears, needs and wishes that he was unable to put into words.

### *Part III: The Stimulus Drawing Technique as Metaphor in Adolescent Art Therapy*

The stimulus drawings by Rawley Silver (hereafter referred to as stimulus drawings), provide a valuable resource for art psychotherapy with children and adolescents. Although these drawings were originally developed for assessment purposes, this section will focus on the stimulus drawings as a projective technique with adolescents in an inpatient psychiatric setting. The drawings stimulate symbol formation and provide insight into strengths, conflicts, and maladaptive defenses of even highly resistive clients. The metaphoric level of material is less emotionally charged, and can often serve as a bridge to the child's life situation. Furthermore, the therapist has a better chance of effectively being understood while speaking within the child's own symbolic language (Ekstein and Wallerstein, 1957).

## Directives and Technique

The child is provided with paper and pencils or other suitable media. The four stimulus card groupings of People, Animals, Places and Things are placed in front of them and the following directions are given:

> Choose 2 or 3 cards which can be combined together to illustrate a story. You may choose cards from any category, but do not take more than one card from a single category.

After the cards are chosen, continue with the following:

> Draw a picture using the *ideas* from the cards you have chosen. Try not to copy the cards directly, but use them as a starting point for your picture.

Upon completion of the drawing, the child is asked to explain it by telling a story which contains a beginning, a middle and an end. Finally, the therapist asks the child to provide a moral or title for the story.

The child's personal symbols and metaphors are presented through the selection of stimulus cards and the storytelling process. A varied choice of mood and setting are available within the combinations of the 50 possible stimulus card selections. Drawings may range from creative fantasy to tragedy, depending upon the life experience and current affect of each individual.

As in any art work, no single stimulus drawing should be interpreted to represent overall functioning of that individual. These projective responses, as reflections of internal states, will vary from day to day. Common characters and themes surfacing over time, however, offer the therapist a more genuine understanding of the child's inner process (Silver, 1983).

Schematic deviation from the original stimulus cards is a creative variable, and by no means should be perceived as being abnormal. In the author's experience, however, major alterations in form or subject often punctuate a critical theme for that individual. Figure 9 illustrates the stimulus cards selected by a 14 year old boy with a history of repeated abuse and abandonment. During the drawing process the whale, often selected by adolescents to symbolize venting or "blowing off steam," was transformed to a shark moving toward a frightened man (as seen in Figure 10). When asked if this change was significant, the young man discussed the fear he felt when his mother used to "take her anger out" on him.

When the child presents a story which contains a great deal of unresolved conflict, it is important for the therapist to assist that child in sealing over raw affect and achieving closure. The stimulus drawings often enhance the primary process orientation of the art media, evoking powerful affect-laden material relating to family, home and interpersonal relationships. Keeping interpretation within the metaphor at these times may prove less threatening to a frightened child. The metaphor can be used to manipulate toxic primary-process material without prematurely lifting its meaning into the language of the secondary process (Caruth and Ekstein, 1966).

One method very helpful in facilitating this process is the "Mutual Storytelling Technique" developed by Dr. Richard Gardner. This technique provides the therapist with the opportunity to create a second story containing the same characters and theme, but presents the child with

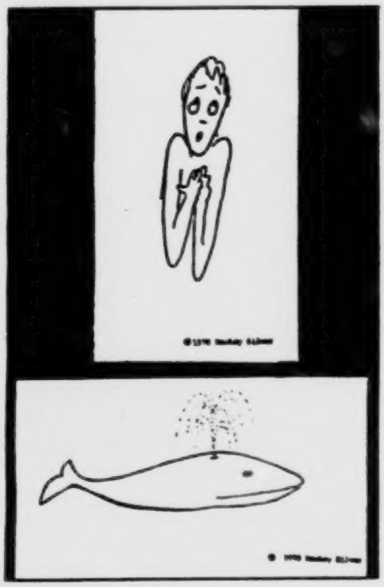

Figure 9

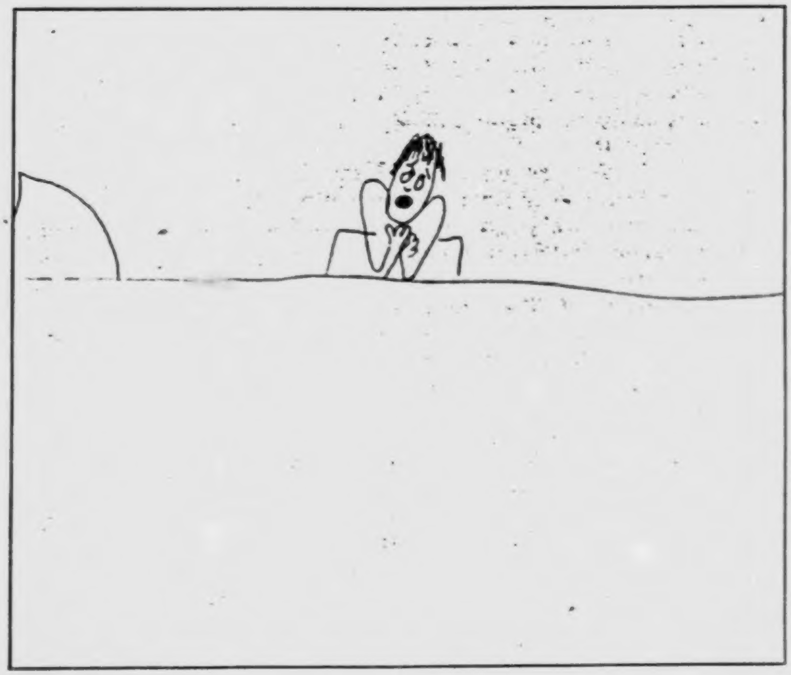

Figure 10

healthier adaptations and coping choices. Gardner (1982) explain his technique as follows:

> After asking myself, "What would be a healthier resolution . . . than the one used by the child?," I create a story of my own. My story involves the same characters, setting, and initial situation as the child's story, but it has a more appropriate or salutary resolution of the most important conflicts. In creating my story, I attempt to provide the child with more alternatives . . . Therapy must open new avenues not considered in the child's scheme of things. (page 69)

Readers interested in this technique are referred directly to the source for a more comprehensive explanation of story analysis (Gardner, 1971).

A corrective drawing has similar potential, and can be used separately or in conjunction with the storytelling technique. This process allows the child and/or therapist to make changes on the original drawing which helps to alleviate a threatening situation. For example, a dragon in pursuit of a helpless victim can be "contained" with an added fence to help that child set healthy limits.

## Case Example

Frequently, the situation arises in which clients recognize their personal metaphors and choose to process them directly. This was the case with Michael, a withdrawn 16 year old with a history of withholding anger until he blew up in violent acting-out episodes. The last of these incidents culminated with Michael kicking down a door because he felt his father "wasn't listening" to him. Michael's natural parents divorced seven years ago. Feelings of rejection developed as he was traded back and forth between parents. He felt especially rejected by women, a position which was continually reinforced by the covert actions of his step-mother. Due to non-verbal tendencies and past therapeutic failures, art psychotherapy was determined to be the treatment of choice for this young man. Despite psychological tests indicating little capacity for insight, Michael worked actively through metaphor. Choosing the stimulus drawings of a king and a castle (Figure 11) Michael illustrated his feelings of isolation (Figure 12). His story went as follows:

Michael: "One day the king forgot his keys and had to climb the wall. So he went to climb the wall and just as he got to the top he fell."

Therapist: "What happened next?"

Michael: "He went to the hospital, and found out he had a spare set of keys to get back in, but he also realized that this door (pointing to the small door below the king) was open all along."

Therapist: "Does any of this story fit for you? Did you ever feel a time when you felt locked out and tried to climb in, but kept falling?"

Michael: "In a way I feel like that with my family. I feel like they're on the inside and they lock me out."

Therapist: "But you have a spare set of keys. Do you have any ideas what those keys may be that you already possess?"

Michael: "I don't know. I'm so confused. I just can't talk to my step-mother. She's the one that really locks me out."

Therapist: "I think we need to work on what keys are there for you, and for you to remember that somewhere in that fortress is an unlocked door. Can you think of who or what the door might be?"

Michael: "The door might be my father, but its a small door. It has to be a lot bigger before I could fit through."

Michael's story not only demonstrated that he had capacity for insight, but it also provided a valuable therapeutic focus underscoring the need for a stronger alliance between father and son. Weekly family therapy sessions were temporarily revised to meet this goal. Father and son were seen in a dyad for several weeks to increase communication and strengthen assertive skills. With his father's support, Michael was able to overcome the fear of expressing himself to his step-mother, and was able to relinquish his role as the "identified patient" in the family.

***"As in any art work, no single stimulus drawing should be interpreted to represent overall functioning of that individual."***

## Conclusions

In summary, the Rawley Silver Stimulus Drawings are a valuable projective tool for clinicians working with adolescents and children. These drawings provide a wonderful opportunity to enter into a child's own symbolic language. The storytelling process offers further insight into the child's strengths and weaknesses, and allows the therapist a vehicle to facilitate conflict resolution.

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________*Silver Drawing Test of Cognitive and Creative Skills.* Seattle: Special Child Publications, 1983.

## Summaries

Studies of Learning Disability, Brain-Injury, and Mental Illness

### 1. Clues to Cognitive Functioning in the Drawings of Stroke Patients

*American Journal of Art Therapy,* 1975, Vol 15, No. 1 pages 3-8

A study of 8 patients, this article discusses their impairments and responses to drawing tasks of the *Silver Drawing Test*. The responses indicate that they retained different cognitive strengths, suggesting that the tasks might be useful in localizing areas of brain damage. The responses by four of these patients are also discussed in Reprint #12, *Art as Language.*

### 2. Stimulus Drawings & Techniques in Therapy, Development, and Assessment (95 pages)

*Trillium Press,1981/1982, Ablin Press Distributors,1986/1991/1997*

This assessment is based on the observation that different individuals perceive the same stimulus drawings differently, that past experiences influence perception, and that responses reflect facets of personality in ways that can be quantified. Part 1,Theoretical Background, includes chapters on Individual Differences, Consistency, Humor, and Range of Emotional Content. Part 2 includes the three techniques; Part 3, the 50 stimulus drawings which are presented on 3x5" cards.

### 3. Silver Drawing Test of Cognition and Emotion (140 pages)

Special Child Publications,1983, Ablin Press Distributors,1990, 1996.

Chapters in the 1996 manual include Theoretical Background, Administering and Scoring, Examples of Scored Responses, Reliability and Validity, 1990-1995 Studies, and Developmental Techniques. Appendices include Test Materials, Normative Data, and Developmental Techniques.

The *SDT* has also been standardized on approximately 2,000 children and adults in Brazil where it was translated and published. A report of the Brazilian findings by Allessandrini, Duarte, Dupas, and Bianco, was published in *ARTherapy, Journal of the American Art Therapy Association* (Volume 15, No. 2, 107-115, 1998).

### 4. Draw a Story: Screening for Depression and Age or Gender Dfferences

*Ablin Press Distributors, 1988/1993* 112 pages)

This assessment includes 28 stimulus drawings in two arrays. The manual provides information about administering, scoring, examples of scored responses, and studies of reliability, depression, and age or gender differences in attitudes toward self and others.

Responses are scored on a 5-point point rating scale ranging from strongly negative to strongly positive story content. To determine whether strongly negative responses are associated with clinical depression, 24 art therapists, teachers, and school counselors administered the test to 350 subjects, including depressed, hospitalized children and adults; patients with nondepressive psychopathology; students with learning disabilities or hearing-impairments; and 117 children and adolescents who were neither depressed nor impaired. A chi-square analysis found the proportion of depressed children and adolescents (scoring 1 point) significantly greater than the proportion of any other group scoring 1 point. Although strongly negative responses did not necessarily indicate depression, and conversely, positive responses did not exclude depression, the findings suggested that a child or adolescent scoring 1 point, may be at risk.

A second study found that depressed males tended to respond with negative themes; depressed females, with ambiguous, ambivalent, or unclear themes.

### 5. Using the Silver Drawing Test in School and Hospital,

Coauthor, Felix Carrion

*American Journal of Art Therapy*, 1991, Vol. 30, No. 2, pages 36-43

Carrion used the *SDT* in an inpatient psychiatric program as part of a battery of tests. His findings modified impressions and clinical assumptions about the cognitive resources of patients. For example, a patient who was unable to draw a sequence, may have been unable to organize stimuli meaningfully, rather than resistant to disclosure.

Silver used the test to screen for depression among children attending public schools. For example, a child diagnosed as learning-disabled, drew a suicidal fantasy in response to the Drawing from Imagination task. Since he scored in the 94th percentile *on the SDT*, the findings suggested that masked depression may have obscured his intelligence in other test performances.

Additional studies of brain injury, emotional disturbance, or learning disbilities, not summarized or reprinted here, are described briefly in the list of publication at the end of this book (# 25, 29, 38, 41, 50, 54, and 57).

# Part Three: Studies of Unimpaired Children and Adults Age and Gender Differences, Self-Images, and Correlations Between Tests

# 16. Sex Differences in the Emotional Content of Drawings

*ARTherapy, Journal of the American Art Therapy Association*, Vol 4, No. 2, 1987

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originally published in *ARTherapy: Journal of the American Art Therapy Association*

*Rawley Silver, Ed.D., ATR, HLM, is the author of* Developing Cognitive and Creative Skills Through Art. *This is her 38th publication in the field of art therapy. The paper was presented at the 1986 Annual Conference of the American Art Therapy Association, held in Los Angeles, California. She is also a painter, having had her 10th one-person exhibition in October, 1986.*

***This study was completed with a focus on possible differences relative to sex or age in the expression of emotions through drawings. This study was an attempt to verify and/or amplify preliminary findings by the author, by using larger and more diverse populations coupled with a more controlled research design. Questions asked referred to differences between men, women, boys and girls, in their concepts of self and environment as expressed through particular drawings. The drawings were from Stimulus Drawings (Stimulus Drawings and Techniques, by Silver), followed by discussion and clarification of meanings. A 7-point scale (on a continuum) was used in evaluation, and for each drawing two scores were obtained: one for Principal Subject (i.e., a main participant, person) and one for the Environment (including people, objects or events portrayed). A determination of reliability was made through a process of interscorer agreement. Significant differences were found between males and females across all age groups (girls, boys, women and men in four age groups: third graders, high school seniors, adults and the elderly). Emerging from the findings a composite male and a composite female are portrayed. In a closing discussion, the author offers suggestions and/or questions that can lead to further research in specific areas related to sex differences in the emotional content of drawings.***

## Introduction

In this study we asked if there were differences in sex or age in expressing emotions through drawings. The questions arose after examining drawings by art therapy students who had participated in a workshop on the use of Stimulus Drawings and had responded to the drawing task themselves. Their response drawings were predominantly negative—drawings about unhappy people in unpleasant situations.

Was this typical of adults? Or did these adults have unusually negative associations? In search of answers, the stimulus drawings were presented to groups of other adults and to children, and their response drawings evaluated on the 5-point Projection Scale of the Silver Drawing Test (Silver, 1983, p. 33). Results indicated that some groups tended to respond with predominantly negative themes while others responded with positive themes—happy associations and fortunate subjects.

The study reported here, was an attempt to verify and amplify the preliminary findings by using larger and more diverse populations and a more controlled research design.

One of the questions asked was whether there were differences between men and women, boys and girls, in their concepts of self and environment as expressed through drawings.

Witkin and his associates found significant differences between the sexes in laboratory tests involving perception (1954). In one test, their subjects were asked to adjust a luminous rod, surrounded by a tilted luminous frame, to the true upright position. In some trials, the subject's body was upright, in other trials, tilted. Results showed a wide range of differences in perception. At one extreme, some individuals determined the perceived upright almost exclusively in reference to the visual field. At the other extreme, some located the upright almost entirely on the basis of bodily position, uninfluenced by the field.

They also found that women tended to be more dependent on the visual field than men, while men tended to rely more on the positions of their own bodies in perceiving the rod independently of its background. Similarly, in their tilting-room-tilting-chair test, women relied less on the position of their bodies in determining the position of the room, and were more strongly influenced by the visual field.

With children, the differences in dependence on the visual field observed at the adult level occurred at all the ages tested, down to the 8-year-old level. Not until the 17-year level, however, did the differences in scores between girls and boys tend to be statistically significant, and only at the adult level were they consistently significant.

Since perception plays an essential role in the choice of stimulus draw-

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> ***"[Are] there differences between men and women, boys and girls, in their concepts of self and environment as expressed through drawings?"***

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ings, we asked whether gender differences would be found in the scores of response drawings, whether males and females differ in their differentiation of self from environment. And since some groups in our preliminary study tended to respond with negative themes and others with positive themes, it was also questioned whether there were age or sex differences in the degree of negativity in response drawings.

## PROCEDURES

### The Stimulus Drawing Task

In this task (Silver, 1986a), participants are asked to choose two Stimulus Drawings (SDs) from among the group of 50 presented, imagine something happening between the subjects selected, then show what is happening in drawings of their own. When drawings are finished, they are given titles and then discussed, whenever possible, so that meanings can be clarified.

Copying is discouraged. Emphasis is on expressiveness rather than skill. The SDs are intended to be ambiguous in order to stimulate a flow of associations and to invite expression through visual symbols and metaphors.

Vilstrup (1983) has written a review of the Stimulus Drawing techniques. Sandburg, Silver and Vilstrup (1984) have reported on the use of Stimulus Drawings with three populations, adapting the basic technique to the needs of the patients with whom each worked: Sandburg with adult psychiatric patients in a day-care setting; Silver with stroke patients in a rehabilitation center; and Vilstrup with adolescents in an inpatient psychiatric setting. Response drawings may be evaluated either for emotional content or for levels of cognitive and creative skill.

*"Emphasis is on expressiveness rather than skill."*

### The Evaluation Instrument

To obtain greater precision in evaluating emotional content, the 5-point scale for evaluating response drawings was expanded into a 7-point continuum ranging from strongly negative content, such as drawings about suicide (1 point), to strongly positive content, such as drawings about honeymoons (7 points). The median score (4 points) is used for drawings that are ambivalent, unclear, or neither negative nor positive (Silver, 1986a).

For each drawing, two scores are obtained, one for the Principal Subject and one for the Environment—including the people, objects or events portrayed. This scale and scoring examples are shown in Figures 1 through 6.

To determine the reliability of the scale, a study of interscorer agreement was undertaken. Three judges independently scored 24 response drawings: four drawings selected at random from each of six populations of children and adults. The three judges, all women, were registered art therapists.

Before scoring, the art therapists met for one hour to discuss the scale and to score and discuss practice drawings. Then the 24 response drawings were presented individually at random to the art therapists who scored them without further discussion.

In the five analyses performed, agreement coefficients ranged between .924 and .549 as measured by Finn's r (Whitehurst, G. 1984). To illustrate, an r = .80 denotes 80% agreement beyond chance agreement (Silver, 1986a, 1986b). Thus the scale appears to be a reliable measure for evaluating emotional content projected into response drawings by children and adults.

### Subjects

The stimulus drawing task was presented to 326 girls, boys, women and men in four age groups: third graders, high school seniors, adults and the elderly.

*"The stimulus drawing task was presented to . . . girls, boys, women and men in four age groups."*

The elderly population consisted of 19 men and 34 women in two Senior Centers in New York, one in a suburban neighborhood, the other in New York City. These Centers provided activities, hot lunches and opportunities to socialize.

The remaining adult population consisted of 11 men and 114 women, between the ages of 20 and 30, in three groups: artists and teachers in a suburb of New York City; Special Education teachers in Albany; and art therapists from various parts of the country.

The third graders consisted of 55 boys and 58 girls in two elementary schools in a middle class socio-economic community in New Jersey.

The high school seniors consisted of 10 young men and 25 young women, the total number of students in an English class in a New York City high school.

### Statistical Analyses

Response drawing scores were analyzed by means of a 2×4×2 Factorial Analysis of Variance with repeated measures on the last variable. The first variable, gender, had two levels (male and female). The second variable, age group, had four levels (third graders, high school seniors, adults and the elderly). The third variable, type of score, was the repeated variable, since for each drawing two scores were obtained (Principal Subject and Environment). From each age group, for each gender, ten subjects were randomly selected.

It was hypothesized that sex and age differences would be found in

## Scale for Evaluating Concepts of Self and Others Through Response Drawings*

**Principal Subject(s)**

1 point: Strongly negative, such as dead, dying, helpless, or in grave danger

2 points: Moderately negative, such as frightened, frustrated, angry, or suffering

3 points: Mildly negative, such as sad, wistful, disappointed, dissatisfied, or unfortunate

4 points: Intermediate level, such as unclear, ambiguous, ambivalent, both negative and positive, or neither negative nor positive

5 points: Mildly positive, such as smiling, safe, active, relaxed, or enjoying something

6 points: Moderately positive, such as happy, strong, effective, aggressive, or fortunate

7 points: Strongly positive, such as loved, overcoming powerful forces, escaping, or rescuing

**Environment (including people, objects, and events)**

1 point: Strongly negative, such as life-threatening, dripping knives, smoking guns, tombstones, prisons

2 points: Moderately negative, such as dangerous, hostile, frustrating, stressful, rejecting, unhappy, or unfortunate

3 points: Mildly negative, such as unpleasant activities or scenes, rain, snow, heat, dark clouds, bare trees, rock, storms, sunsets

4 points: Intermediate level, such as ambiguous, ambivalent, unclear, both negative and positive, or neither negative nor positive

5 points: Mildly positive, such as pleasant activities or scenes, flowers, leafy trees, fruits, sunrise

6 points: Moderately positive, such as tasty, friendly, pleasurable, or fortunate

7 points: Strongly positive, such as loving, or deeply gratifying

---

*It is important to note that a high score may reflect desires rather than reality, what is wished for rather than evidence of mental health. This may be clarified in clinical follow-up.

**Fig. 1**
This scale appears on page 5 of *Stimulus Drawings and Techniques* by Rawley A. Silver (Trillium Books, 1986a) and is reproduced by permission.

*Figures 2 through 5 are reproduced with permission from* STIMULUS DRAWINGS AND TECHNIQUES, *1986a*

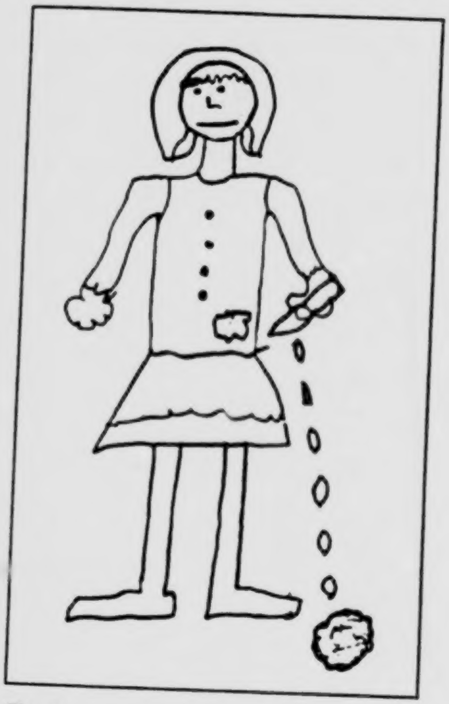


**Fig. 2**
"The Girl Who Killed Herself," Norbert, 12, 7th grade, Subject 1, Environment 1.

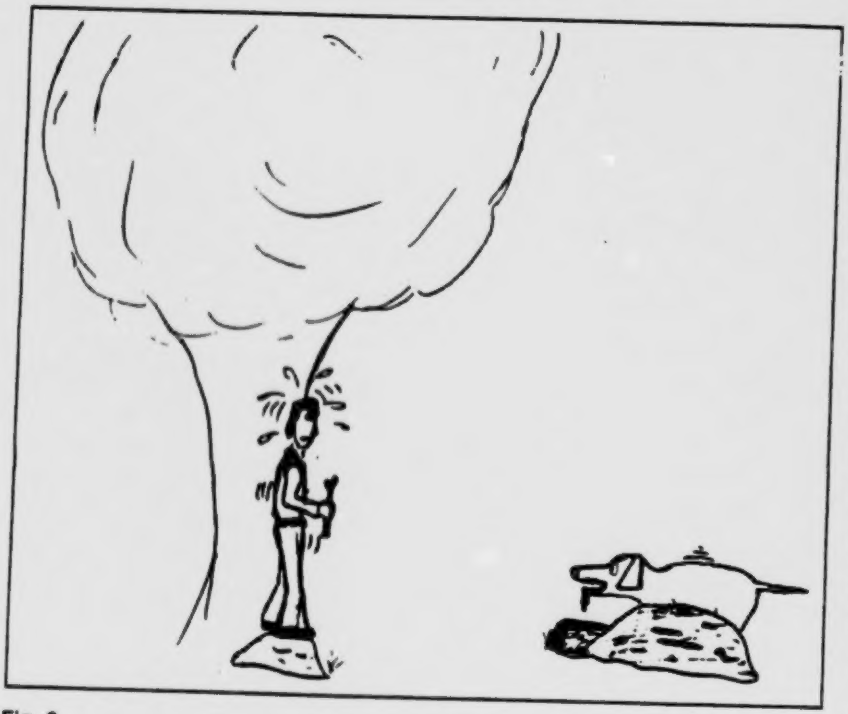


**Fig. 3**
"N-n-n-nice Doggie," Billy, 15, 10th grade, Subject 2, Environment 2.

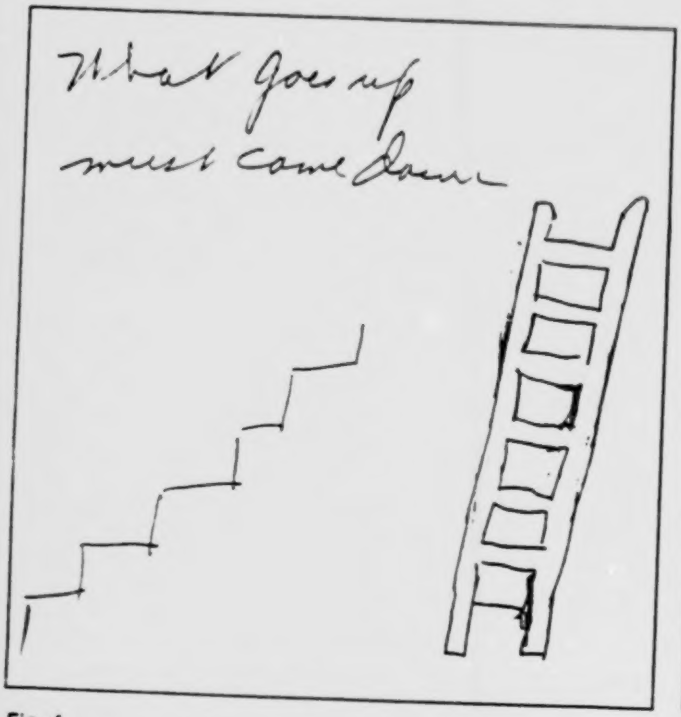


**Fig. 4**
"What goes up must come down," Elderly female, Subject 4, Environment 4.

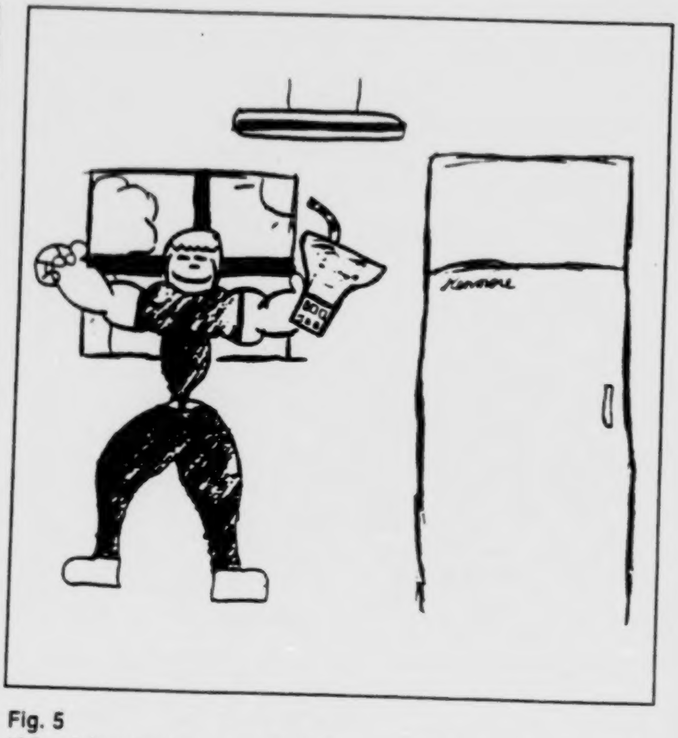


**Fig. 5**
"Muscleboy having a snack," Bruce, 12, 7th grade, Subject 6, Environment 6.

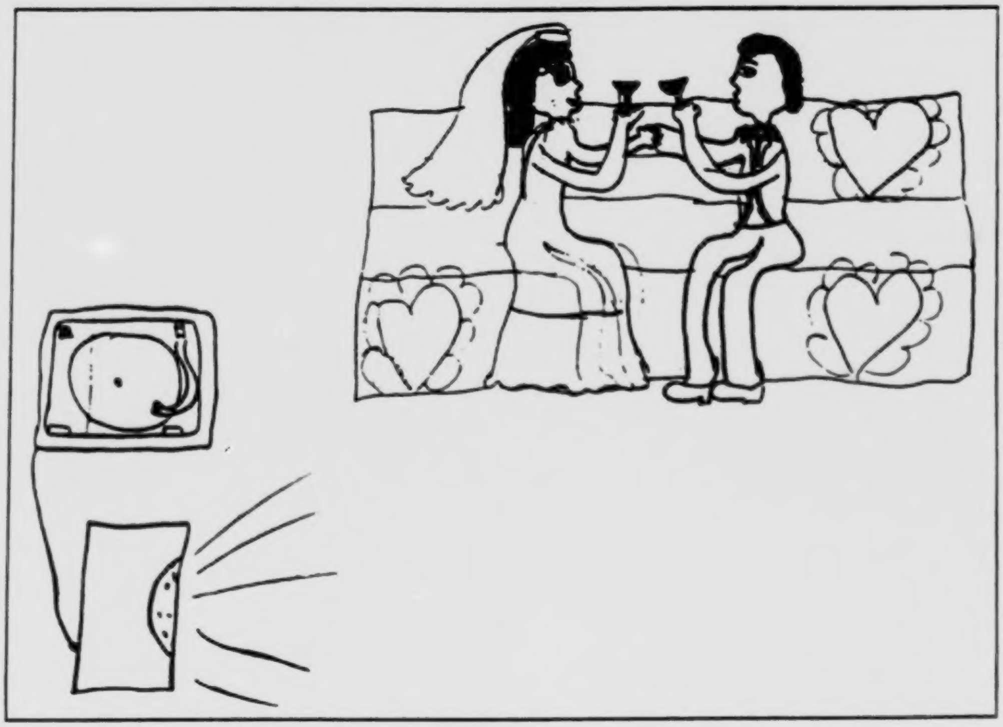


**Fig. 6**
"Honeymoon Suite," Darlene, 18, 12th grade, Subject 7, Environment 7.

the emotional content of response drawings as measured by the 7-point scale.

## RESULTS

Significant differences were found between males and females across all age groups. Females received nearly identical scores for Principal Subject and Environment; males received higher scores for Principal Subject, lower scores for Environment.

In other words, if the rating scale is an accurate reflection of the drawings, males consistently portrayed more negative surroundings inhabited by more positively seen subjects. These differences were statistically significant, exceeding the .05 level of probability, as shown in Tables 1 and 2, and the graph, Figure 7.

These findings were supported by a Newman-Keuls Multiple Range Test of the significance of score type by sex interaction. Results were significant at the .05 level, showing that males tended to give higher ratings to Principal Subjects than to their surroundings. Female ratings showed no significant differences.

In an analysis of the entire sample of each age group, female ratings for Principal Subject and Environment were found to be significantly correlated; that is, as the ratings for Principal Subject increased, the ratings for Environment also increased.

Among Third Graders, for males, the correlation between Principal Subject and Environment scores were $r = .48$ ($p < .005$); for females, $r = .76$ ($p < .005$). Therefore, for both sexes, as Principal Subject ratings increase, Environment ratings increase.

Among High School Seniors, for males, the correlations were $r = .34$ (not significant), for females, $r = .76$ ($p < .005$).

Among Adults, for males, the correlations were $r = .18$ (n.s.), for females, $r = .67$ ($p < .005$).

Among the Elderly, for males, the correlations were $r = .19$ (n.s.), for females, $r = .60$ ($p < .005$).

Thus for every age group, female Principal Subject and Environment scores are significantly related.

Both males and females portrayed Principal Subjects more positively than they portrayed Environments. These differences also exceeded the .05 level of probability.

It is also interesting that women portrayed more negative views than men in both Principal Subject and Environment, but that they came together in old age in rating their Principal Subjects positively.

Age differences approached but did not achieve significance ($p < .10$). Nevertheless, it should be noted that of all groups, the high school girls received the highest ratings for both Principal Subject and Environment while the third grade

> ***"Significant differences were found between males and females across all age groups."***

**Table 1** Analysis of Variance

| Source | df | Sums of Squares | Mean Square | f | p |
|---|---|---|---|---|---|
| Sex | 1 | .10 | .10 | .03 | n.s. |
| Age Group | 3 | 25.32 | 8.44 | 2.57 | n.s. |
| Sex by Age Group | 3 | 21.05 | 7.01 | 2.14 | n.s. |
| Subjects within Sex, Age | 72 | 236.50 | 3.28 | | |
| Score Type | 1 | 10.00 | 10.00 | 5.75 | .05 |
| Score Type by Sex | 1 | 7.22 | 7.22 | 4.15 | .05 |
| Score Type by Age | 3 | 5.75 | 1.91 | 1.10 | n.s. |
| Score Type by Sex by Age | 3 | 5.52 | 1.84 | 1.06 | n.s. |
| Score by Subjects w.i. Sex, Age | 72 | 125.50 | 1.74 | | |

**Table 2** Table of Means for 80 Randomly Selected Subjects

| | Principal Subject | | Environment | | Total |
|---|---|---|---|---|---|
| | Males | Females | Males | Females | |
| Third Graders | 4.1 | 2.8 | 2.9 | 2.9 | 3.2 |
| High School Students | 4.4 | 4.7 | 3.3 | 4.6 | 4.3 |
| Adults | 3.8 | 3.3 | 4.1 | 3.2 | 3.6 |
| Senior Citizens | 4.4 | 4.4 | 2.7 | 4.2 | 3.9 |
| Total | 4.2 | 3.8 | 3.3 | 3.7 | 3.7 |
| | 3.99 | | 3.49 | | |

Statistical Analyses were prepared by Beatrice Krauss, Ph.D.

girls received the lowest ratings, and that the most negative perceptions of the Environment were portrayed by the elderly men.

A closer look at these findings, even though they are not statistically significant, seems worthwhile.

## The Composite Male

The 8-year-old boy who emerges from the statistical findings, portrays a threatening world, as threatening as the world of the 8-year-old girl, but unlike her, his Principal Subject tends to escape the dangers (mean scores 2.9 for Environment, 4.1 for Principal Subject). An example is shown in Figure 8.

The male adolescent, age 17 or 18, tends to perceive his Principal Subject as more powerful and his surroundings less threatening than the 8-year-old boy (Figure 9), but his Principal Subject is not quite as powerful as the Principal Subject of his female counterpart (mean scores 4.4 and 4.7 respectively), and his environment remains on the negative side while hers is on the positive side (3.3 and 4.6 respectively).

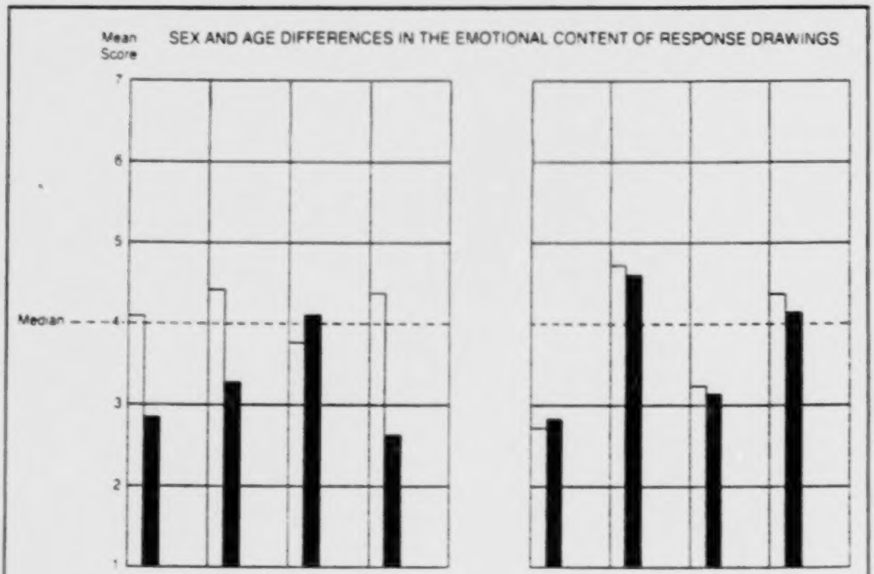
The man, age 20 to 30, reverses the negative environment-positive subject syndrome characteristic of the male groups as a whole, but the differences in mean score are slight and close to the median (Environment 4.1, Principal Subject 3.8, Figure 10).

The elderly man portrays the most negative environment of all eight groups (mean score 2.7) combined with a positively seen Principal Subject (mean score 4.4), matching the score of the elderly woman and the high school male, and exceeded only by the high school female (Figure 11).

## The Composite Female

The 8-year-old girl seems to feel the most vulnerable and distressed of all the groups, with a mean score for Principal Subject, 2.8 (frightened,

**Fig. 7**



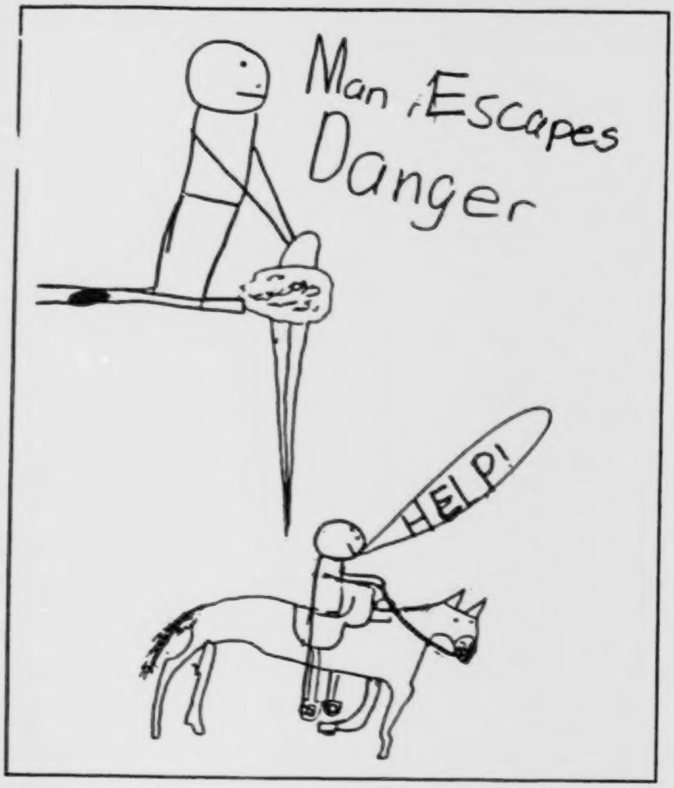

Man Escapes Danger
HELP!

**Fig. 8**
Response by an 8-year-old boy.

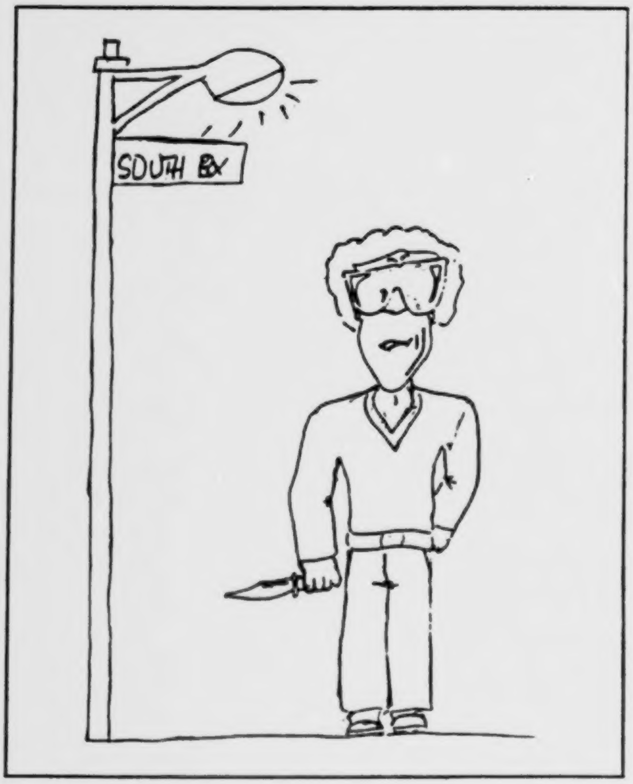


**Fig. 9**
Response by a male adolescent.

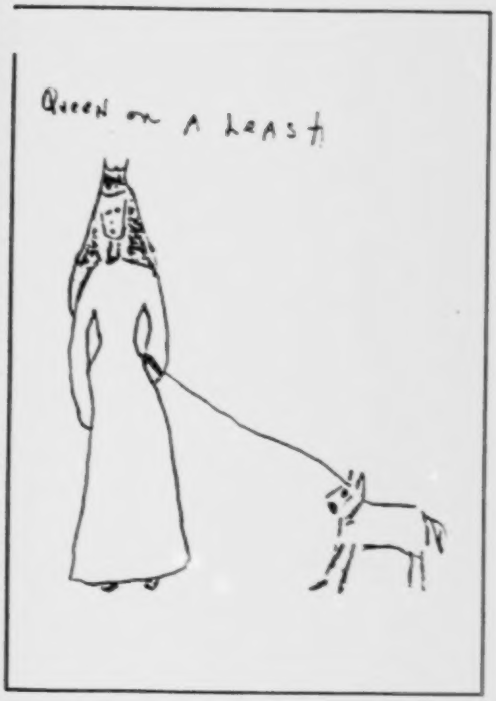

Queen on A LeAsh

**Fig. 10**
Response by a young man (presumably unvare that he drew a dog, not the queen, on a ash).

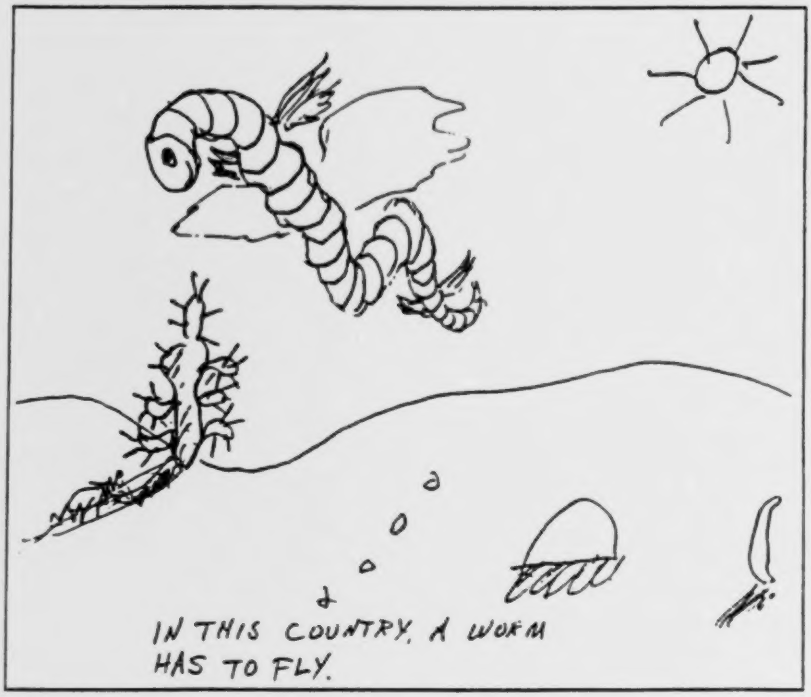

IN THIS COUNTRY, A WORM HAS TO FLY.

**Fig. 11**
Response by an elderly man.

frustrated, suffering, etc.) and for Environment, 2.9 (dangerous, stressful, etc., Figure 12).

By the age of 17 or 18, she sees her environment as positive, her mean score about as much above the median as the score of her male counterpart is below (4.4 and 3.3 respectively, Figure 6). Apparently she feels the most positive of all the groups in both Principal Subject and Environment, suggesting that girls of this age have a stronger sense of well-being and self-confidence than at the other times of their lives (mean score for Principal Subject, 4.7; for Environment, 4.6).

As she becomes a woman of 20 to 30, this confidence seems to fade. Her mean scores drop back below the median (Principal Subject, 3.3; Environment, 3.2) a greater decline than that of her male counterpart (Figure 13).

As she ages, she seems to grow stronger again, crossing the median line onto the positive side in both categories (mean score 4.4 for Principal Subject; 4.2 for Environment, Figure 14).

### Discussion

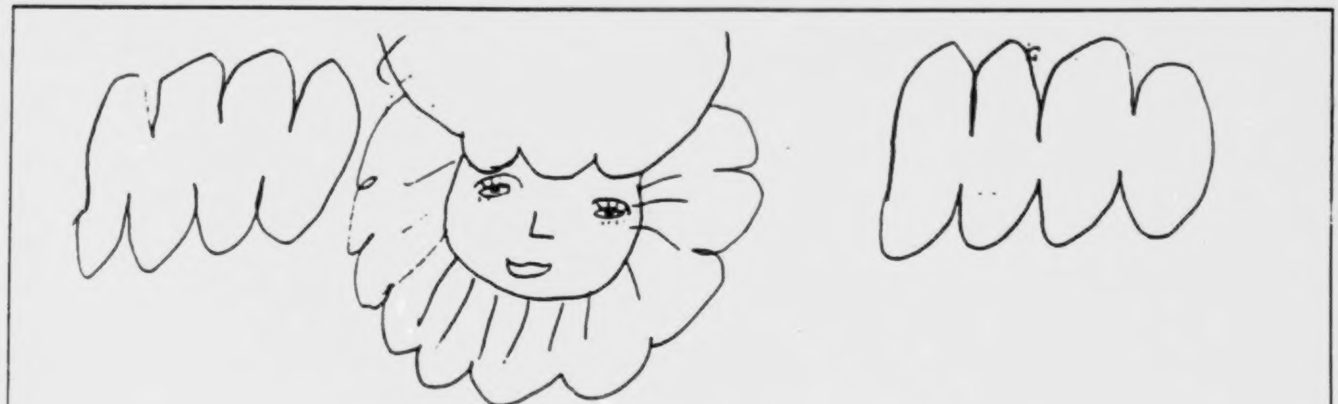
To the extent that the Principal Subject of a response drawing represents the self-image of the person who draws it, and the Environment represents the way that person perceives the world, the findings of this study suggest that males, from boyhood through old age, have more self-confidence and stronger self-images than women and girls. Even though males tend to see the world as more threatening, they see themselves as overcoming the dangers.

On the other hand, women and girls tend to relate themselves to the world. When they portray unfortunate subjects, their subjects tend to inhabit unpleasant worlds while their fortunate subjects inhabit pleasant worlds.

How can these differences be explained? What leads men and boys to see themselves fighting back in a hostile world, while women and

**Fig. 12**

Response by an 8-year-old girl "The tiger chases the chick to eat it."



girls see themselves as part of the world, not opposing it?

Can these differences be attributed to cultural influences? biological factors? neither or both? Do they reflect strengths and weaknesses or maturity and immaturity, and if so, which sex is stronger or more mature?

Some observers seem to see gender differences like these as the result of cultural pressures, indicating a feminine weakness, lack of trust in one's self. Erica Jong, for instance, writes that women find it hard to achieve an authentic sense of self because they "are always encouraged to see themselves as role players and helpers . . . rather than as separate beings" (Jong, 1972).

Witkin and his associates also seem to view these differences as unfavorable to women, a matter of development, indicating feminine immaturity. They found women "less able to utilize the position of their own bodies" in perceiving the rod independently of its background or in determining the position of the room, more strongly influenced by the prevailing visual field (p. 155). Their assumption of correlations between maturity and field independence seems contradicted by another of their findings: that a number of hospitalized mental patients gave extremely high independent performances (p. 470), suggesting that independence is not necessarily correlated with maturity. Furthermore, they acknowledge that perception is influenced "in a basic and probably primary way" by the nature of the field in which it takes place, and that differences in task structure make for important differences in perception (p. 467). The perceptual situations provided by their experiments represent only one kind of perception, and in this kind of perception, males and females seem to respond differently.

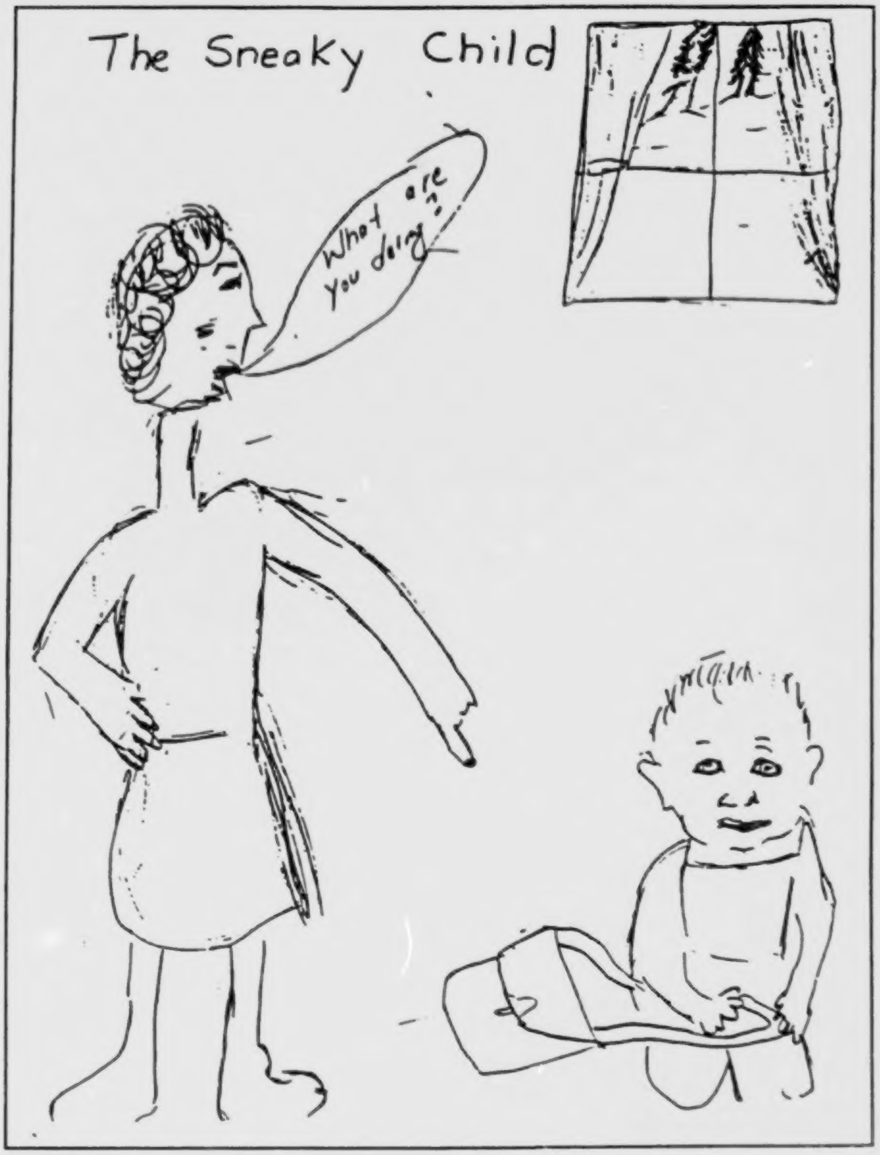


**Fig. 13**
Response by a young woman.

When Witkin and his associates extended their experiments beyond spatial perception, testing groups of normal men and women with Figure Drawing, TAT, and Rorschach tests as well as interviews, they found no significant differences in mean personality scores that would parallel the differences in perceptual performances (p. 488). What they found were certain personality characteristics relevant to performance in perceptual tasks. These included self concepts, ways of managing impulses and strivings, and the nature of their subjects in relation to their environments (including other people). Field-dependence was found to be associated with passivity and low self-esteem.

Thus the field dependency associated with females may reflect the development of greater sensitivity to the environment, caused perhaps by adapting to environments that make harsher ego demands on females than on males, social environments that discourage girls from being narcissistic and aggressive, and encourage boys to want what they want when they want it.

Lewis Thomas seems to attribute gender differences, such as these, to biology, and to see them as favor-

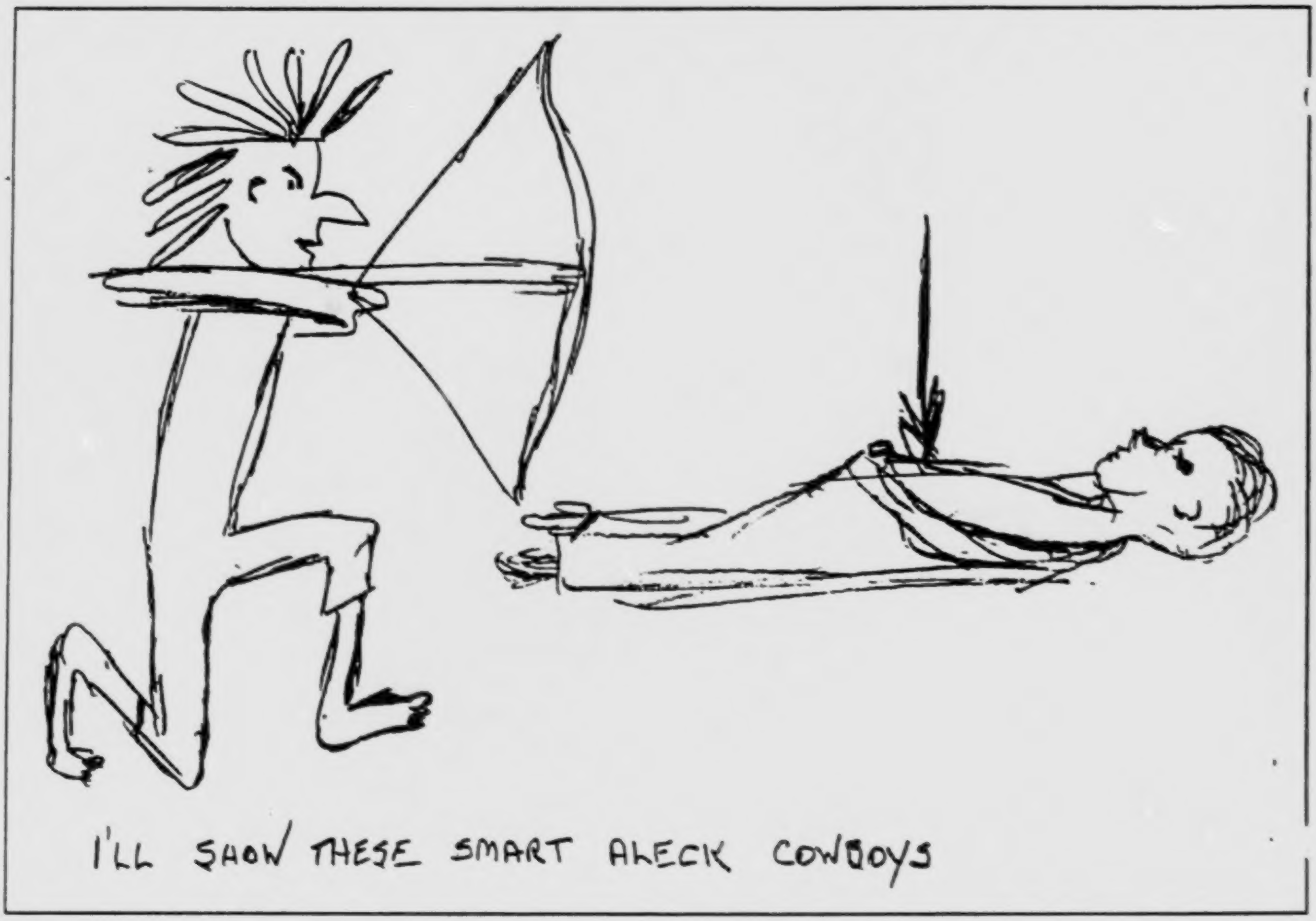

I'LL SHOW THESE SMART ALECK COWBOYS

**Fig. 14**
Response by an elderly woman.

able to females. As he observes, childhood lasts considerably longer in the human male than in the female. "There is somewhere a deep center of immaturity built into the male brain, always needing steadying and redirection" (Thomas, p. 236). He suggests that in the X chromosome (female) there is information for a qualitatively different sort of behavior than the instructions in the Y (male) chromosome, and that this difference benefits the long-term needs of the species. On "occasions when the survival of human beings is in question, I would trust that X chromosome and worry about the Y," and place the use of thermonuclear weapons "squarely in the laps of the world's women . . . I do not trust men in this matter" (p. 237).

It is important to note that the findings of gender differences reported here did not hold true for all members of the gender groups. In Witkin's studies, some men showed marked dependence on the visual field while some women showed very little dependence. In our study, many individuals, male and female, produced drawings that differed from their groups as a whole.

Although a comprehensive review of individual responses is beyond the scope of this study, the fact that some response drawings scored 1 or 2 points while others scored 6 or 7 points suggests that therapists will find individual responses useful for evaluating the emotional needs of the individuals who draw them, particularly those who may be depressed.

This study has found that response drawings by men and boys differ from drawings by women and girls to a degree that is statistically significant. These findings raise questions for further research: will

*". . . response drawings by men and boys differ from drawings by women and girls to a degree that is statistically significant."*

additional studies support the finding that men and boys tend to represent their Principal Subjects more positively, and Environments more negatively, than women and girls? Do males and females of other cultures or subcultures respond differently? Do male raters score response drawings differently? Is the 7-point scale useful in identifying and assisting those individuals, male or female, who are depressed or at risk for suicide?

These questions suggest that further research with larger and more diverse populations is worthwhile in order to build on the knowledge obtained.

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# 17. Gender Differences in Drawings, A Study of Self-images, Autonomous Subjects, and Relationships

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## Abstract

*This paper reports a study of gender differences in drawings by 261 school children responding to a projective drawing task. Their responses are examined for concepts of self-sufficiency or connectedness with others in an attempt to find answers to three questions: Do children tend to identify with the subjects of their drawings by choosing principal subjects of the same gender as themselves? Do boys tend to represent autonomous subjects in their drawings? And, do girls tend to represent subjects interacting with others?*

*Drawings and titles are examined first for the genders of their principal subjects, comparing them with the genders of the children who chose them. Also, the drawings are examined for subjects acting alone or independently, and for subjects interacting with others.*

A previous study by the author found significant differences in drawings by males and females across four age groups: third graders, high school seniors, adults, and the elderly. The men and boys in the sample tended to portray the world as threatening and their principal subjects were portrayed as fighting back and overcoming dangers. The women and girls, however, received nearly identical scores for the principal subjects and environments they portrayed (Silver, 1987).

The present study is an attempt to amplify and clarify the previous findings by addressing one of the four age groups, children primarily 8-9 years of age, and asking the following three questions:

1. *In responding to a drawing task, do children tend to identify with the subjects of their drawings by choosing principal subjects of the same gender as themselves?*

   It is often assumed that children and adults represent themselves, directly or indirectly, when responding to projective drawing tests. To obtain quantitative information about the degree to which principal subjects represent self-images, drawings by 261 children were examined, comparing their genders with the genders of the subjects they choose, and taking into account the subjects of sentences and the use of pronouns.

2. *Do boys tend to represent autonomous subjects in their drawings?*

   Autonomous subjects are defined as people or animals who act independently and appear self-sufficient. They may be the only subject of a drawing or appear indifferent to other subjects. In the previous study, the subjects portrayed by boys tended to live in threatening environments, but managed to escape from dangers, as illustrated in Figure 1. Scored on a rating scale ranging from 1 point (strongly negative) to 7 points (strongly positive), the mean score of their principal subjects was 4.1; environments, 2.9.

3. *Do girls tend to represent subjects interacting with others?*

Although the subjects portrayed by girls in the previous study also lived in threatening environments, they tended to interact with other subjects, but not escape, as shown in Figure 2. The mean score of their principal subjects was 2.8; environments, 2.9*.

Gilligan, Ward, and Taylor (1988) find gender-related perspectives for organizing thoughts and feelings in two modes of moral judgment: the feminine mode based on concepts of care and responsibility to others and the masculine mode based on concepts of detachment and self-sufficiency. Different ways of viewing the world yield different ways of perceiving and solving problems. In our culture, the ideal of childhood development is seen from the masculine perspective, equating maturity with self-sufficiency and equating deficiency or immaturity with interdependence. These authors challenge the male ideal, suggesting a concept of morality centered on care and responsiveness to others. From the feminine perspective, there are close relationships between concepts of self and of morality as evident in the relationships of self to others. It is observed that woman's sense of self is built around connections with others, and loss of connection is experienced as a loss of self (Miller, 1976).

## Procedures

The present study examines responses to a drawing task for concepts of self-sufficiency or connectedness with others. Drawings can express concepts of self and attitudes toward others, providing an additional context for assessing gender differences.

The drawings assessed here were produced in response to the *Drawing from Imagination* task of the *Silver Drawing Test of Cognitive Skills and Adjustment* (Silver, 1983, 1990). In this task, examinees are asked to choose two drawings from 15 stimulus drawings, imagine something happening between the subjects they choose, then draw a picture about what is happening. When they finish drawing, they are asked to give titles to their drawings. The stimulus drawings consist of line drawings of people, animals, and things, six of which are shown in Figure 3. The remaining stimulus drawings include sketches of a girl, man, woman, dog, cat, bug, refrigerator, TV, and bed.

Responses to the task were examined first for the genders of their principal subjects, comparing them with the genders of the individuals who chose them. Next, responses were divided into two categories: autonomous subjects acting alone or independently, and relationships, principal subjects interacting with others. Responses are scored on a 5-point rating scale adapted from a scale in the *Silver Drawing Test* as shown in Table I.

## Subjects

Subjects for this study included 261 children, 145 boys and 116 girls, ages 7 to 10, selected from eight elementary schools. Previously, these children had responded to the *Silver Drawing Test* when it was administered to children and adults in order to develop normative data and determine test reliabili-

## Table I

Autonomous Subjects vs Relationships: Rating Scale for Assessing Drawings

| Score | **Autonomous Subject** | **Relationships (may be implied)** |
|---|---|---|
| 1 point: | seems depressed | life-threatening or violently assaultive |
| 2 points: | angry, fearful, unfortunate, or displeased | unfriendly, stressful, destructive, or aggressive humor |
| 3 points: | ambiguous or ambivalent | ambiguous or ambivalent |
| 4 points: | passive enjoyment, such as watching TV | friendly or pleasurable |
| 5 points: | active enjoyment, such as drinking a soda | loving or caring (may include stressful situations) |

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*Editor's note: Figures 1 and 2 are from the earlier study published in ART THERAPY, July, 1987.

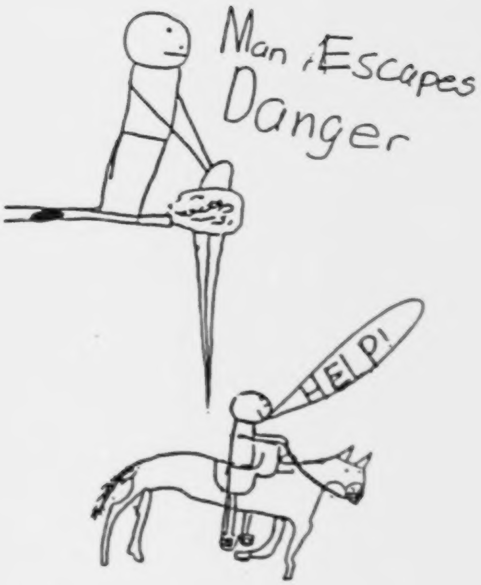
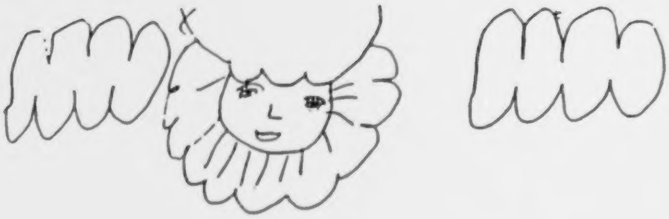


Fig. 1 Man escapes danger.



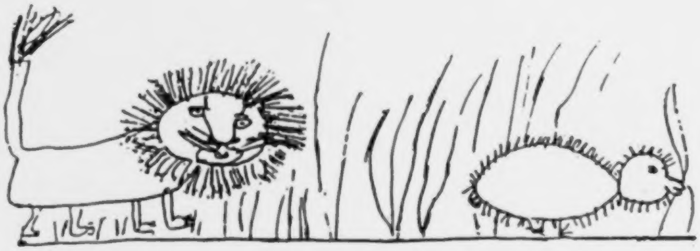


Fig. 2 "The tiger chases the chick to eat it" by Anna.

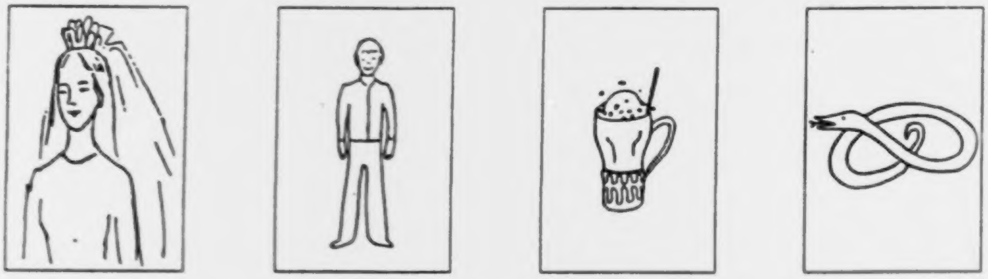


Fig. 3 Some of the Stimulus Drawings Used in the Drawing Task (reproduced with permission by the copyright owner).

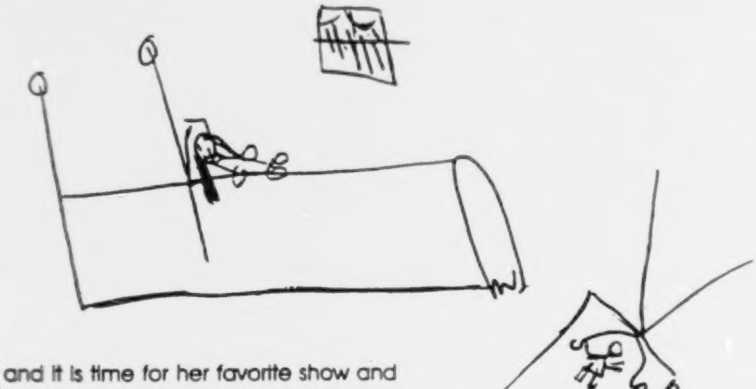


Fig. 4 By Susie. "The girl is watching the TV and it is time for her favorite show and she is scared because it is raining out." Susie's association is with being alone and afraid. Score: 2 points.

*Names of children are fictitious.*

ty. In the present study, responses to the *Drawing from Imagination* subtest by children in the second, third and fourth grades were reexamined for gender differences. The second graders were 7-8 years old; third graders, 8-9 years old; and fourth graders, 9-10 years old; most of the children in this study were between 8 and 9 years of age.

The schools included suburban public schools in New Jersey, Nebraska, Pennsylvania, and Ontario, Canada, as well as four schools in low to middle class neighborhoods in New York. New York schools included two suburban public schools, an urban public school and an urban parochial school.

## Table II

Principal Subjects of Response Drawings by Girls

| Respondents | Principal Subjects | | | |
|---|---|---|---|---|
| | Female | Male | Animals | X |
| 39, Gr.2 | 30 | 3 | 6 | |
| 37, Gr.3 | 23 | 6 | 8 | |
| 40, Gr.4 | 20 | 3 | 17 | |
| Total: 116 | 73 (63%) | 12 (10%) | 31 (27%) | |

## Table III

Principal Subjects of Response Drawings by Boys

| Respondents | Principal Subjects | | | |
|---|---|---|---|---|
| Number | Female | Male | Animals | X |
| 50, Gr.2 | 2 | 27 | 21 | |
| 54, Gr.3 | 5 | 38 | 11 | |
| 41, Gr.4 | 2 | 21 | 18 | |
| Total: 145 | 9 (6%) | 86 (59%) | 50 (34%) | |

## Results

1. *Comparing Genders of the Principal Subjects of Drawings with Genders of the Children Who Drew Them.*

As shown in Tables II and III, a majority of the children drew pictures about subjects of the same gender as themselves, the boys tending to draw pictures about male subjects and the girls, female subjects. In the drawings by girls, 63% of the principal subjects were female, 10% male. In the drawings by boys, 59% of the principal subjects were male, 6% female. To determine whether these differences were significant, the *chi square* test was used. Results indicate that gender differences were significant at the .001 level of probability.

Among those who chose subjects of the opposite sex, all but four seem to identify with, or empathize with, these subjects. These four children drew fantasies about adults. In the two fantasies by boys, women appeared ridiculous as well as menacing, who threaten small animals with knives. In the two drawings by girls, one man was portrayed as a cruel scientist and the other man's behavior was ambiguous.

2. *Drawings About Autonomous Subjects*

Of the 261 children in the sample, fewer than half drew pictures about autonomous subjects. Although boys outnumber girls (46% boys, 37% girls), the differences between genders were not significant.

## Table IV

Drawings About Autonomous Subjects in Responses by Girls
(#1-13, Gr 4; 1-20 Gr 2)

| Number | Score | | | | |
|---|---|---|---|---|---|
| | 1. Depressed | 2. Fearful or Angry, etc. | 3. Ambiguous/ Ambivalent | 4. Passive Enjoyment | 5. Active Enjoyment |
| 20, Gr.2 | 0 | 1 | 4 | 13 | 2 |
| 10, Gr.3 | 0 | 1 | 2 | 5 | 2 |
| 13, Gr.4 | 2 | 2 | 1 | 6 | 2 |
| 43 (37%) | 2 (5%) | 4 (9%) | 7 (16%) | 24 (56%) | 6 (14%) |
| | | 6 (14%) | | | 30 (70%) |

As shown in Tables IV and V, both genders had more positive than negative associations with autonomous subjects: 70% of the girls and 72% of the boys associated autonomous subjects with pleasurable experiences; 14% of the girls and 9% of the boys associated them with unpleasant experiences. The greatest difference between genders was found in drawings about autonomous subjects who appeared actively engaged in pleasurable activities, characterized by the score of 5 points. Here the boys outnumbered the girls—28% compared with 14%.

Examples of drawings about autonomous subjects are shown in Figures 4 to 6.

## Table V

Drawings About Autonomous Subjects in Responses by Boys (#1-19 Gr 4)

| Number | Score<br>1. Depressed | 2. Fearful or Angry, etc. | 3. Ambiguous/ Ambivalent | 4. Passive Enjoyment | 5. Active Enjoyment |
|---|---|---|---|---|---|
| 17, Gr.2 | 0 | 0 | 5 | 7 | 5 |
| 31, Gr.3 | 3 | 2 | 5 | 13 | 8 |
| 19, Gr.4 | 0 | 1 | 3 | 9 | 6 |
| 67 (46%) | 3 (4%) | 3 (4%) | 13 (19%) | 29 (43%) | 19 (28%) |
| | | 6 (9%) | | | 48 (72%) |

## Table VI

Drawings About Relationships in Responses by Girls

| Number | Score<br>1. Assaultive | 2. Unfriendly | 3. Ambiguous/ Ambivalent | 4. Friendly | 5. Caring/ Loving |
|---|---|---|---|---|---|
| 19, Gr.2 | 1 (#21) | 7 (#22-28) | 0 | 8 (29-36) | 3 (37-39) |
| 27, Gr.3 | 1 | 13 | 3 | 4 | 6 |
| 27, Gr.4 | 2 | 9 | 4 | 9 | 3 |
| 73 (63%) | 4 (5%) | 29 (40%) | 7 (10%) | 21 (29%) | 12 (16%) |
| | | 33 (45%) | | | 33 (45%) |

## Table VII

Drawings About Relationships in Responses by Boys

| Number | Score<br>1. Assaultive | 2. Unfriendly | 3. Ambiguous/ Ambivalent | 4. Friendly | 5. Caring/ Loving |
|---|---|---|---|---|---|
| 33, Gr.2 | 9 | 11 | 4 | 3 | 6 |
| 23, Gr.3 | 5 | 5 | 7 | 3 | 3 |
| 22, Gr.4 | 1 | 6 | 6 | 7 | 2 |
| 78 (54%) | 15 (19%) | 22 (28%) | 17 (22%) | 13 (17%) | 11 (14%) |
| | | 37 (47%) | | | 24 (31%) |

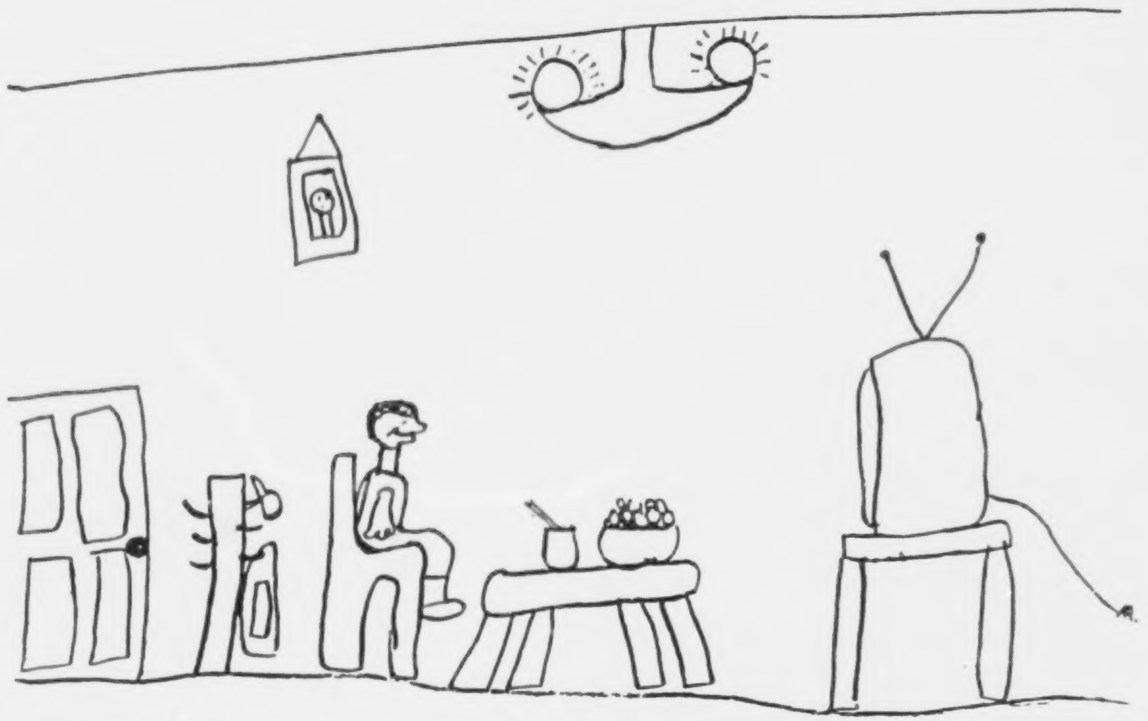


Fig. 5 By Kenny, "1. I am sitting and watching TV. 2. I bough[t] (sic) soda and popcorn. 3. I took (off my) cap and sweater."

*Kenny's use of the first person singular confirms that his subject represents himself. His boy is not just passively enjoying TV, he is actively self-sufficient, having bought a snack and made himself at home in his comfortable room, a strongly positive association with an autonomous subject. Score: 5 points.*

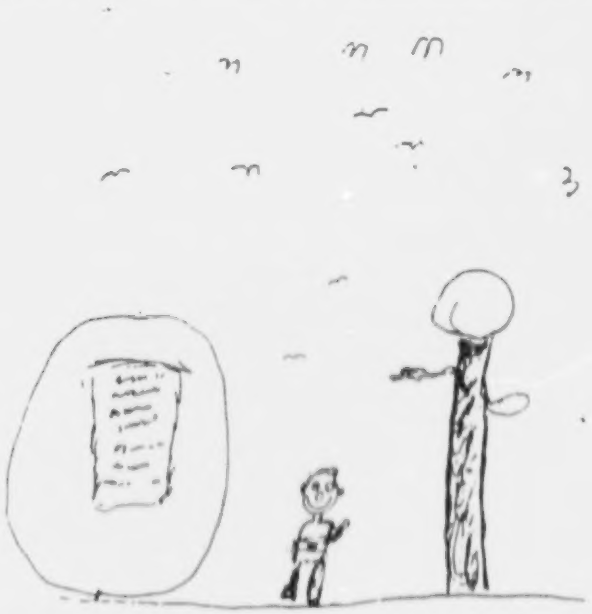


Fig. 6 By Billy, "The boy and the nife (sic)" Billy's association is with death and suicide. Score: 1 point.

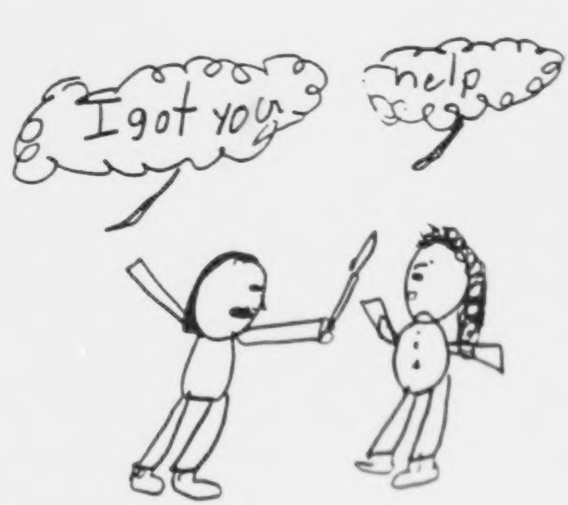


Fig. 7 "The Man with the Knife," by Ted. Assaultive and life-threatening relationship. Score: 1 point.

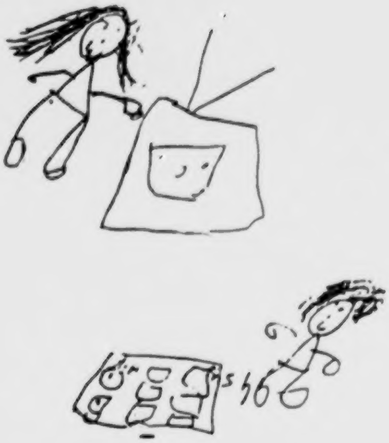


Fig. 8 "The Girl was wiching (sic) TV and playing a game but the brother came in and changed the station," by Minna. Unfriendly and stressful. Score: 2 points.

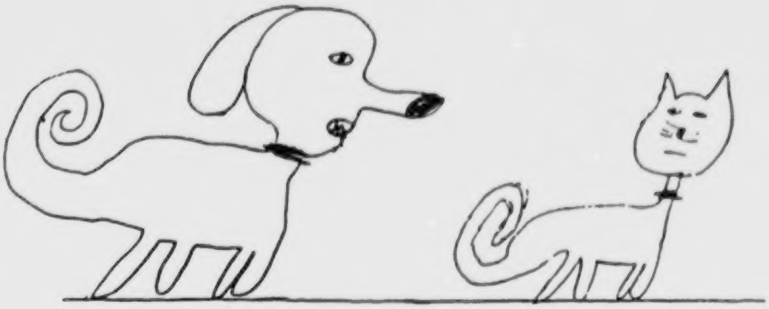


Fig. 9 "I love my pets (dog and cat)," by Danielle. Loving. Score: 5 points

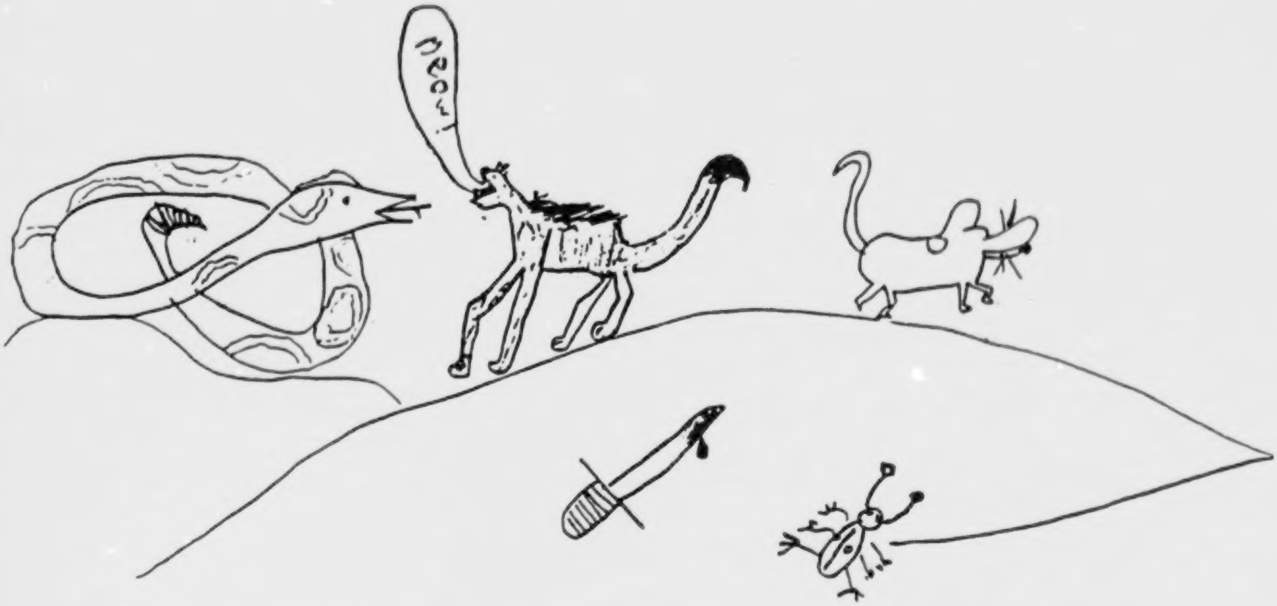


Fig. 10 "The cat who tried to save the rat," by Anthony. Caring in a dangerous world. Score: 5 points.

3. *Drawings About Relationships*

Of the 261 children in this sample, more than half drew pictures about people or animals interacting with other subjects, or implied relationships with others. Although girls outnumbered boys in drawing about relationships (63% girls, 54% boys), these differences were not significant. Again, there is a 75% probability that this is due to chance.

In the emotional content of these drawings, boys outnumber girls almost four to one, in drawing fantasies about life-threatening or violently assaultive relationships, characterized by the score of 1 point (19% boys, 5% girls), as shown in Tables VI and VII. Girls outnumbered boys, however, in portraying unfriendly or hostile relationships, scored 2 points (40% girls, 28% boys).

Examples of such drawings are shown in Figures 7 to 10.

In examining drawings about positive relationships, we find that girls outnumbered boys (girls 45%, boys 31%), but if we break down positive relationships into friendly relationships (4 points) and caring or loving relationships (5 points), there was little difference between genders in drawings scored 5 points (girls 16%, boys 14%) and girls outnumbered boys in scoring 4 points (girls 29%, boys 17%).

## Discussion

The findings of this study support the assumption that children who respond to projective drawing tasks tend to identify themselves with the principal subjects of their drawings. Results indicate that most of the 261 children in the sample drew pictures about subjects the same gender as themselves to a degree that is a statistically highly significant at the .001 level of probability.

In addition to subjects the same gender as themselves, 27% of the girls and 36% of the boys chose animal subjects which also may serve to represent self-concepts. Since there was no opportunity to ask the children to discuss their drawings, the drawings about animal principal subjects were eliminated from statistical evaluations.

Also eliminated was the finding that most of the children who chose principal subjects of the opposite sex seemed to identify with or empathize with these subjects. Although 10% of the girls and 6% of the boys chose principal subjects of the opposite sex, only four children failed to represent these subjects sympathetically.

The drawings about autonomous principal subjects do not show significant differences between genders. Although the proportion of boys who represented autonomous subjects (46%) did exceed the proportion of girls who represent autonomous principal subjects (37%), this did not occur to a degree which is statistically significant.

It is interesting to note, however, that proportionally twice as many boys as girls drew pictures about autonomous subjects actively enjoying themselves: 28% of the boys and 14% of the girls drew pictures about self-sufficient subjects engaged in pleasurable activities. This finding parallels Gilligan's observation that detachment and its attendant egocentrism are associated with the masculine mode.

In drawings about relationships, again no significant difference between genders was found. Although the proportion of girls who represented relationships (63%) did exceed the proportion of boys who represented relationships (54%), this difference was not statistically significant.

When we examined the emotional characteristics of relationships portrayed, we found that 15 boys (19%) and only 4 girls (5%) drew pictures about violently assaultive relationships. Although the proportion of girls who portrayed friendly or pleasurable relationships exceeds the proportion of boys, there was virtually no difference between genders in portraying loving or caring relationships (girls 16%, boys 14%). Some of the boys associated caring relationships with living in a dangerous world while all of the girls associated caring relationships with living in a pleasant world, indicating another possible difference between genders.

The number of respondents in these rating scale categories were much too few to expect to find significant differences. It is hoped, however, that future studies with larger populations will amplify and clarify these findings.

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# 18. Age and Gender Differences Expressed Through Drawings: A study of attitudes toward self and others

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## Abstract

*This study investigated gender and age differences in attitudes expressed in response to a drawing task. Subjects included 531 respondents in five age groups: children ages 7–10, younger adolescents ages 13–16, older adolescents ages 17–19, younger adults ages 20–50, older adults ages 65 and older.*

*Although proportionally more females than males drew pictures about relationships, and more males than females drew pictures about solitary subjects, these differences did not reach statistical significance. However, when the* attitudes *expressed toward self and others were taken into account, significant differences were found.*

1. *Respondents tended to choose and draw subjects the same gender as themselves to a highly significant degree.*
2. *Males expressed positive attitudes toward solitary subjects, negative attitudes toward relationships to a highly significant degree.*
3. *Females expressed positive attitudes toward solitary subjects, both positive and negative attitudes toward relationships to a highly significant degree.*
4. *Males showed significantly higher frequency than females in drawing about assaultive relationships. However, age and gender differences interacted resulting in a significant age variability in assaultiveness for females but not for males. The proportion of older women who drew pictures about assaultive fantasies exceeded the proportion of older men who did so, as well as the proportion of all other female age groups.*
5. *A converse age and gender interaction was found for caring relationships. Males showed significant age variability whereas females had significant frequency of caring relationships across all age groups. The proportion of younger men who drew pictures about caring relationships exceeded the proportion of younger women who did so, as well as the proportion of all other male age groups.*

## Introduction

This study asked whether responses to a drawing task can express attitudes toward self and others, whether males and females have characteristically different attitudes, and if so, whether attitudes change from youth to maturity to old age.

Although these questions are not usually asked by art therapists, answers may provide useful norms for evaluating emotional needs as well as more accurate expectations. For example, several studies have found that males focus on independence and competition, that females focus on connectedness and caring for others, and that our school systems favor the male point of view (Gilligan, Ward, & Taylor, 1988; Tannen, 1991; *The American Association of University Women Report*, 1992). These studies based their findings on academic achievement and verbal communication.

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**Editor's note:** This research study received the 1992 Research Award of the American Art Therapy Association. It is included in this special issue of *Art Therapy* to highlight Dr. Silver's professionalism and commitment to art therapy research.

This paper presents an expansion of a study of gender differences in drawings by children (Silver, 1992). It considers the same questions but expands the inquiry and includes adolescents and adults. The underlying theory—that drawings can yield information about differences between genders and age groups—received some support in another previous study (Silver, 1987). Differences between genders were found in the emotional content of drawings across four age groups: third graders, high school seniors, younger adults, and older adults. The male groups consistently portrayed more negative environments inhabited by positively seen subjects; female groups seemed to relate subjects to environments, portraying fortunate subjects in pleasant worlds and unfortunate subjects in unpleasant worlds. These differences were significant across the four age groups. To the extent that the principal subject of a drawing reflects the self-image of the person who draws it, and the environment reflects the way that person perceives the world, the findings suggested that boys and men tend to see themselves as fighting in a dangerous world, while women and girls tend to see themselves as part of the world rather than opposing it.

The case for unconscious representation of the self in human figure drawings has not been firmly established, according to Harris (1963). He suggests that the concept defies objective validation and questions the theories of Machover (1949) and Buck (1948). Harris also cites studies of gender differences by Jolles (1952) who found that 80% of children ages five to eight drew their own sex first, and by Schubert and Wagner (1954) who found that a smaller proportion of women drew the female figure first than the proportion of men who drew the male figure first.

The present study is an attempt to clarify previous findings by asking three questions:

1. Do respondents to a specific drawing task choose same-gender subjects to a significant degree, supporting the view that the subjects of drawings reflect self-images?
2. Do women and girls respond to a specific drawing task with drawings about interpersonal relationships, while men and boys respond with drawings about solitary subjects?
3. Can responses to a drawing task provide information about age and/or gender differences in expressing attitudes toward solitary subjects and relationships, and if so, can this information clarify expectations and identify emotional strengths and weaknesses?

## Methodology

In response to the first question, the genders of respondents were compared with the genders of principal subjects in their drawings. For answers to the second question, genders were compared after dividing responses into two groups: those portraying solitary subjects and those portraying relationships. For answers to the third question, responses were assessed on a five-point rating scale (see Figure 1).

*Attitudes Toward Solitary Subjects*

| | |
|---|---|
| 1 point: | Strongly negative: for example, solitary subjects who are sad, helpless, or dead; the future seems hopeless. |
| 2 points: | Moderately negative: for example, solitary subjects who are angry, frightened, dissatisfied, or unfortunate. |
| 3 points: | Intermediate level: neither negative nor positive (unemotional) or both negative and positive (ambivalent or ambiguous). |
| 4 points: | Moderately positive: solitary subjects associated with passive enjoyment, for example, watching TV or being rescued. |
| 5 points: | Strongly positive: solitary subjects associated with active enjoyment, accomplishment, for example, drinking soda or escaping. |

*Attitudes Toward Relationships*

| | |
|---|---|
| 1 point: | Strongly negative: for example, life-threatening or assaultive relationships. |
| 2 points: | Moderately negative: for example, stressful, hostile, confrontational, or unpleasant relationships. |
| 3 points: | Intermediate level: neither negative nor positive (unemotional) or both negative and positive (ambivalent or ambiguous). |
| 4 points: | Moderately positive: for example, friendly or pleasurable relationships. |
| 5 points: | Strongly positive: for example, caring or loving relationships. |

**Figure 1.** Rating Scale for Assessing Attitudes Toward Solitary Subjects and Relationships Expressed in Response to the Drawing Task

Age and gender groups were then compared in terms of percentages and mean scores.

## Subjects

Subjects for the study included 531 children and adults, 257 male, 274 female. Five age groups were sampled: children ages 7 to 10, young adolescents ages 13 to 16, older adolescents ages 17 to 19, younger adults aged 20 to 50, and older adults ages 65 and older.

The children included 116 girls and 145 boys attending grades 2, 3, and 4 in urban and suburban elementary schools in New Jersey, New York, Pennsylvania, and Ontario, Canada. Seven schools were public and one was parochial. The young adolescents included 28 females and 37 males attending grades 8 to 10 in three public urban and suburban schools in Pennsylvania and New York. The older adolescents included 38 females and 22 males attending 12th grade classes in New York urban and suburban public high schools, as well as a class of college freshman in Nebraska.

The sample of younger adults included 61 women and 25 men who attended lectures or workshops and responded to the drawing task anonymously. The older adults included 28 men and 31 women over the age of 65 who lived independently in their communities and responded anonymously to the drawing task while attending recreational programs or social occasions.

## The Drawing Task

Respondents were asked to choose two drawings from the array of *Silver Drawing Test* (SDT) stimulus drawings, imagine something happening between the subjects they chose, then draw a picture of what they imagined. They were encouraged to change the stimulus drawings and to add their own ideas. When drawings were finished, they were given titles and discussed, whenever possible, so that meanings could be clarified. Examples of stimulus drawings are shown in Figure 2.

## The Assessment Instrument

The assessment instrument (Figure 1) was adapted in part from a scale in the *Silver Drawing Test* (*SDT*, Silver, 1990), a five-point continuum ranging between strongly negative and strongly positive themes. It was also adapted from the scale in *Stimulus Drawings and Techniques* (Silver, 1991) which was used in the 1987 study. Relationships between the two previous scales have been examined in a study of interscorer reliability in which 12 of the 24 scored drawings were responses to the *Stimulus Drawing* task and 12 were responses to the *SDT* task. No significant differences in mean ratings were found (t(22) = .8). Thus, there appears to be consistency of measurement between the scales. In addition, the new scale was developed from the scale used in the 1992 study (which was based on the two previous scales), but, in addition, distinguished between autonomous subjects and relationships.

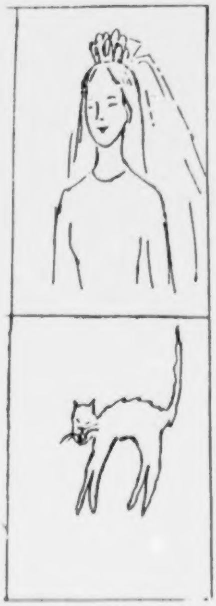

Figure 2. Examples of stimulus drawings.

## Procedures

Responses were divided into two groups: drawings about solitary subjects and drawings about relationships between subjects. These were then examined for gender differences and similarities. It was theorized that respondents who drew solitary subjects thought of themselves as alone while those who drew relationships thought of themselves as part of a group. A solitary principal subject was defined as a person or animal acting autonomously, either the only living subject of a drawing or, if several living subjects are portrayed, they act independently or appear indifferent to one another. Drawings about relationships were defined as drawings of people or animals interacting with one another. The relationships may be visible in the drawing, verbalized in the story, or else implied.

Because the sample of children was considerably larger than any other sample, it was felt that an additional perspective on gender differences would be gained by equalizing the number of subjects in each group and obtaining mean scores on the five-point rating scale. With this in mind, 20 subjects from each of the age and sex groups were selected at random ($N = 200$) and mean scores of the 100 males and 100 females were compared. Although these numbers are too small for a reliable statistical analysis, they provided interesting information and raised questions for further research.

## Results

*Question 1. Do respondents to a specific drawing task choose same-gender subjects to a significant degree, supporting the view that the subjects of drawings reflect self-images?*

Most respondents chose same-gender subjects. Among the 257 males in our sample, 54% chose male principal subjects, 11% chose female subjects, as shown in Table 1. Among the 274 females, 52% chose female subjects, 11% chose male subjects, as shown in Table 2. To determine whether they drew same-gender subjects to a significant degree, a 2×2 chi square ($X^2$) was calculated utilizing those males and females who clearly drew human subjects in their response drawings ($N = 338$). Results indicated that respondents who drew human subjects, drew same-gender subjects to a degree significant at the .001 level of probability ($X^2 = 145.839$ $p < .001$; $ø = .657$). The phi coefficient (ø) was calculated on the chi square to determine the strength of the relationship. The phi coefficient ranges from ø, a weak or nonexistent relationship, to 1, a very strong, definitive relationship.) This finding seems to support the assumption that responses to projective drawing tasks tend to be self-gender images.

Another similarity between genders was found in the choice of animal subjects (34% males, 31% females) which seemed to serve as human symbols, consciously or unconsciously disguised. This observation was illustrated in the response of an older man who apparently drew an analogy: man chases women as dog chases cats (Figure 3).

The tendency to choose same-gender subjects peaked in childhood (63% girls, 59% boys) and reached its lowest level among adults. A surprising difference between genders also appeared. Among younger adults, the tendency to choose same-gender subjects declined to virtually the same level (40% men, 39% women). Among older adults, however, the decline continued among older women, but reversed among the older men, most of whom, like the sample of boys, chose male subjects (boys 59%, older men 54%).

Only 19% of the older women chose same-gen-

### Table 1
### The Gender of Principal Subjects in Drawings by 257 Men and Boys

| Age, Number | Male Subjects | Female Subjects | Animal Subjects | Unclear |
|---|---|---|---|---|
| 7-10, N = 145 | 86 (59%) | 09 (6%) | 50 (34%) | 0 |
| 13-16, N = 37 | 17 (46%) | 03 (8%) | 17 (46%) | 0 |
| 17-19, N = 22 | 10 (45%) | 04 (18%) | 08 (36%) | 0 |
| 20-50, N = 25 | 10 (40%) | 06 (24%) | 05 (20%) | 4 (16%) |
| 65+, N = 28 | 15 (54%) | 05 (18%) | 07 (25%) | 1 (4%) |
| 257 | 138 (54%) | 27 (11%) | 87 (34%) | 5 (2%) |

### Table 2
### The Gender of Principal Subjects in Drawings by 274 Women and Girls

| Age, Number | Male Subjects | Female Subjects | Animal Subjects | Unclear |
|---|---|---|---|---|
| 7-10, N = 116 | 12 (10%) | 73 (63%) | 31 (27%) | 0 |
| 13-16, N = 28 | 05 (18%) | 16 (57%) | 07 (25%) | 0 |
| 17-19, N = 38 | 05 (13%) | 23 (61%) | 10 (26%) | 0 |
| 20-50, N = 61 | 06 (10%) | 22 (39%) | 26 (43%) | 05 (8%) |
| 65+, N = 31 | 03 (10%) | 06 (19%) | 09 (29%) | 13 (42%) |
| 274 | 31 (11%) | 142 (52%) | 83 (31%) | 18 (7%) |

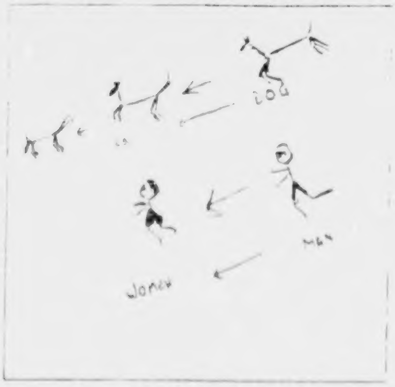

Figure 3. Drawing by an older man.

der subjects, a proportion smaller than any other age or gender group. It should be noted, however, that 42% of the older women, a proportion larger than any other age or gender group, drew genderless human subjects. By comparison, all the children and adolescents who drew human subjects drew them as male or female.

*Question 2. Do women and girls respond to a specific drawing task with drawings about interpersonal relationships, while men and boys respond with drawings about solitary subjects?*

Although proportionally more females than males drew pictures about relationships, and more males than females drew pictures about solitary subjects, these differences did not reach statistical significance. As shown in Table 3, of the 257 men and boys in the sample, 44% drew solitary subjects, 56% drew relationships. Of the 274 women and girls, 39% drew solitary subjects, 61% drew relationships. Both genders drew more relationships than solitary subjects.

These findings may seem to deny that males tend to focus on self-sufficiency and females on responsibility and care, but when *attitudes* were taken into account, as in the third question, significant differences were found.

*Question 3. Can responses to a drawing task provide information about age and/or gender differences in expressing attitudes toward solitary subjects and relationships, and if so, can this information clarify expectations and identify emotional strengths and weaknesses?*

Proportionally more men and boys expressed positive attitudes toward solitary subjects (63% positive, 17% negative), negative attitudes toward relationships (57% negative, 26% positive) as shown in Tables 4 and 5. These differences were significant at the .001 level of probability ($X^2 = 46.971$, $p < .001$; $\phi = .474$).

Proportionally more women and girls also expressed positive attitudes toward solitary subjects (68% positive, 17% negative) as shown in Table 6. Their drawings about relationships, however, were both positive and negative (46% negative; 41% positive, as shown in Table 7. These findings, too, were significant at the .001 level of probability ($X^2 = 25.32$, $p < .001$; $\phi = .327$).

In addition, chi-square analyses were conducted on the frequency of particular attitudes expressed by males and females in the five age groups. The data on this analysis were limited to the frequencies of four attitudes: assaultive relationships, caring relationships, active solitary pleasures, and passive solitary pleasures.

Males showed a significantly higher frequency than females of drawings about assaultive relationships ($X^2\ (1) = 9.38$, $p = < .01$). However, gender and age differences interact ($X^2(4) = 13.07$, $p < .05$), resulting in a significant age variability in assaultiveness for females ($X^2(4) = 11.89$, $p < .05$), but

## Table 3
## Comparing Genders in Drawings About Solitary Subjects and Relationships

| Drawings by 257 Males | | | Drawings by 274 Females | | |
|---|---|---|---|---|---|
| Age, Number | Solitary S. | Relationships | No. | Solitary S. | Relationships |
| 7-10, N = 145 | 67 (46%) | 78 (54%) | N = 116 | 43 (37%) | 73 (63%) |
| 13-16, N = 38 | 15 (39%) | 23 (61%) | N = 28 | 09 (32%) | 19 (68%) |
| 17-19, N = 21 | 06 (29%) | 15 (71%) | N = 38 | 16 (42%) | 22 (58%) |
| 20-50, N = 25 | 12 (48%) | 13 (52%) | N = 61 | 22 (36%) | 39 (64%) |
| 65+, N = 28 | 14 (50%) | 14 (50%) | N = 31 | 16 (52%) | 15 (48%) |
| N = 257 | 114 (44%) | 143 (56%) | N = 274 | 106 (39%) | 168 (61%) |
| M + F = 531 | 114* = 21% | 143 = 27% | | 106 = 20% | 168 = 32% |

## Table 4
## Attitudes Toward Solitary Subjects in Responses by Boys and Men

| Age, Number | Score | | | | |
|---|---|---|---|---|---|
| | 1. Sad or Helpless | 2. Frustrated or Frightened | 3. Ambivalent, Unemotional or Unclear | 4. Passive Pleasure | 5. Active Pleasure |
| 7-10, N = 67 | 3 (4%) | 3 (4%) | 13 (19%) | 29 (43%) | 19 (28%) |
| 13-16, N = 15 | 0 | 3 (20%) | 3 (20%) | 3 (20%) | 6 (40%) |
| 17-19, N = 6 | 0 | 2 (33%) | 1 (17%) | 2 (33%) | 1 (17%) |
| 20-50, N = 12 | 0 | 5 (42%) | 1 (8%) | 2 (17%) | 4 (33%) |
| 65 +, N + 14 | 0 | 3 (21%) | 5 (36%) | 3 (21%) | 3 (21%) |
| Total N = 114 | 3 (3%) | 16 (14%) | 23 (20%) | 39 (34%) | 33 (29%) |
| | Negative: 19 (17%) | | | Positive: 72 (63%) | |

## Table 5
## Attitudes Toward Relationships in Responses by Boys and Men

| Age, Number | Score | | | | |
|---|---|---|---|---|---|
| | 1. Assaultive | 2. Stressful | 3. Ambivalent, Unemotional or Unclear | 4. Friendly | 5. Caring |
| 7-10, N = 78 | 15 (19%) | 22 (28%) | 17 (22%) | 13 (17%) | 11 (14%) |
| 13-16, N = 23 | 8 (35%) | 6 (26%) | 6 (26%) | 2 (09%) | 1 (04%) |
| 17-19, N = 15 | 7 (47%) | 5 (33%) | 1 (7%) | 0 | 2 (13%) |
| 20-50, N = 13 | 2 (15%) | 4 (31%) | 0 | 1 (8%) | 6 (46%) |
| 65 +, N = 14 | 3 (21%) | 9 (64%) | 1 (7%) | 1 (7%) | 0 |
| Total N = 143 | 35 (25%) | 46 (32%) | 25 (17%) | 17 (12%) | 20 (14%) |
| | Negative: 81 (57%) | | | Positive: 37 (26%) | |

not males. In other words, female assaultiveness appeared to change with age, whereas male assaultiveness remained stable.

The converse age and gender interaction was found for caring relationships ($X^2(4) = 12.52, p < .05$). Males showed significant age variability ($X^2\ (4) = 13.10,\ p < .05$), whereas females had similar frequency of caring relationships across age groups.

No significant age or gender effects occurred for passive and active pleasures.

When attitudes toward relationships and solitary subjects were examined in greater detail some intriguing differences appeared:

### 1. Negative Attitudes Toward Relationships

*Strongly negative (assaultive, 1 point).* Proportionally more older women than older men responded with fantasies about aggressiveness (27% females, 21% males), the only age group in which females surpassed males, as shown in Tables 5 and 7. The least difference between genders was found among older adults; the greatest difference was found among children and younger adults. Five times as many younger men as younger women drew pictures about assaultive relationships (15% men, 3% women) and approximately four times as many boys as girls (19% boys, 5% girls). In both adolescent groups, about twice as many males as females drew pictures about assaultive relationships. The fantasies about assaultive relationships followed similar patterns with both genders, increasing with age from third graders to younger adolescents and to older adolescents, dropping to their lowest levels with younger adults, and rising with older adults.

*Moderately negative (stressful relationships, 2 points).* Although little difference between genders was found in drawing about stressful relationships (males 32%, females 36%), noteworthy differences appeared when age groups were examined.

Proportionally more older men expressed fantasies about stressful relationships (64%), than any other age or gender group. Also high was the proportion of younger adolescent girls (53%). An example is shown in Figure 4. The smallest proportion (14%) was found among older adolescent girls.

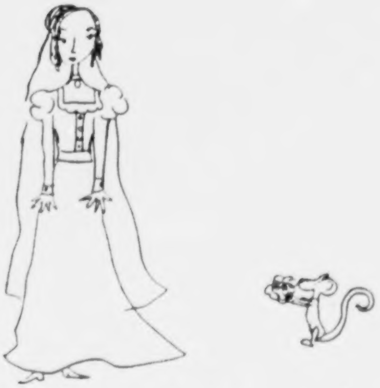

Figure 4. Drawing by a girl, age 11.

**2. Positive Attitudes Toward Relationships**

When caring and friendly relationships were combined, the female age groups excelled (41% females, 26% males). Differences appeared, however, when caring and friendly relationships were examined separately.

***Strongly positive (caring relationships, 5 points).*** Almost no gender differences were found in drawings about caring relationships (15% females, 14% males); age differences, however, were found. The younger men produced the largest proportion of drawings about caring relationships (46%), a proportion surpassing all other male and female age groups (Figure 5). By comparison, only 10% of the younger women drew pictures about caring relationships. Among female age groups, the greatest disparities were found among adolescents (27% older adolescents, 5% younger). Among male age groups, the

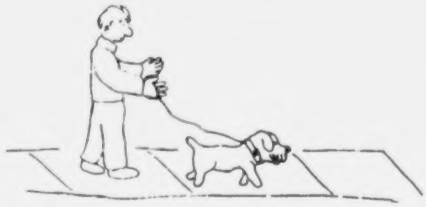

Figure 5. Walking my dog, by a young man.

## Table 6
## Attitudes Toward Solitary Subjects in Responses by Girls and Women

| Age, Number | Score | | | | |
|---|---|---|---|---|---|
| | 1. Sad or Helpless | 2. Frustrated or Frightened | 3. Ambivalent, Unemotional or Unclear | 4. Passive Pleasure | 5. Active Pleasure |
| 7-10, N = 43 | 2 (5%) | 4 (9%) | 7 (16%) | 24 (56%) | 6 (14%) |
| 13-16, N = 9 | 1 (11%) | 0 | 0 | 6 (67%) | 2 (22%) |
| 17-19, N = 16 | 0 | 3 (19%) | 2 (13%) | 8 (50%) | 3 (19%) |
| 20-50, N = 22 | 1 (5%) | 4 (18%) | 1 (5%) | 10 (45%) | 6 (27%) |
| 65+, N = 16 | 2 (13%) | 1 (06%) | 6 (38%) | 2 (13%) | 5 (31%) |
| Total N = 106 | 6 (6%) | 12 (11%) | 16 (15%) | 50 (47%) | 22 (21%) |
| | Negative: 18 (17%) | | | Positive: 72 (68%) | |

## Table 7
## Attitudes Toward Relationships in Responses by Girls and Women

| Age, Number | Score | | | | |
|---|---|---|---|---|---|
| | 1. Assaultive | 2. Stressful | 3. Ambivalent, Unemotional or Unclear | 4. Friendly | 5. Caring |
| 7-10, N = 73 | 4 (5%) | 29 (40%) | 7 (10%) | 21 (29%) | 12 (16%) |
| 13-16, N = 19 | 3 (16%) | 10 (53%) | 2 (11%) | 3 (16%) | 1 (5%) |
| 17-19, N = 22 | 5 (23%) | 3 (14%) | 2 (9%) | 6 (27%) | 6 (27%) |
| 20-50, N = 39 | 1 (3%) | 16 (41%) | 6 (15%) | 12 (31%) | 4 (10%) |
| 65+, N = 15 | 4 (27%) | 3 (20%) | 4 (27%) | 2 (13%) | 2 (13%) |
| Total N = 168 | 17 (10%) | 61 (36%) | 21 (13%) | 44 (26%) | 25 (15%) |
| | Negative: 78 (46%) | | | Positive: 69 (41%) | |

smallest proportion was found among younger adolescents (4%).

*Moderately positive (friendly relationships, 4 points).* Approximately twice as many females as males drew pictures about friendly relationships (26% females, 12% males), and all age groups followed this pattern of gender differences.

### 3. Negative Attitudes Toward Solitary Principal Subjects

When strongly and moderately negative attitudes were combined, no gender differences were found (17% of both males and females). When they were separated, however, differences again appeared.

*Strongly negative (sad or helpless, 1 point).* Although few respondents drew pictures about sad or helpless principal subjects, the proportion of females doubled the proportion of males (6% females, 3% males) as shown in Tables 4 and 6. When age groups were examined, the largest proportions were produced by the sample of older women (13%) and younger adolescent girls (11%) (Figure 6). None of the older adolescent girls and only 5% of the children and younger women drew sad or helpless solitary subjects. Only three of the 114 male respondents drew sad or helpless solitary subjects, and all three were boys ages 7 to 10.

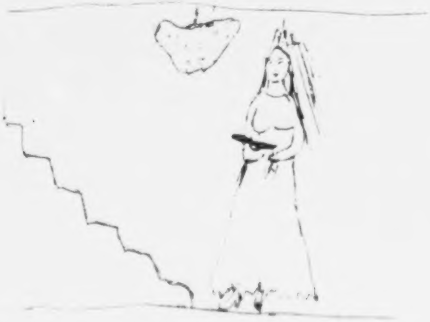

Figure 6. "The Dying Bride," by a girl, age 14

*Moderately negative (frustrated or frightened, 2 points).* A larger proportion of males than females drew angry or frightened solitary subjects (14% males, 11% females).

### 4. Positive Attitudes Toward Solitary Subjects

*Strongly positive (active pleasures, 5 points).* Larger proportions of males than females associated solitary subjects with active pleasures (29% males, 21% females), except for the older women who reversed the tendency. A large proportion of older women than older men associated solitary subjects with active pleasures (31% women, 21% men).

*Moderately positive (passive pleasures, 4 points).* Larger proportions of females than males associated solitary subjects with passive pleasures (47% females, 34% males). The largest proportion was found among younger adolescent girls (67%); the largest male proportion among boys (43%).

In comparing mean scores, the females expressed more positive attitudes toward relationships than did males; males expressed more positive attitudes toward solitary subjects than did females, as shown in Table 8. Except for the sample of younger men, age groups among both genders had higher mean scores for solitary subjects than for relationships. The spread was greater for males than for females. The younger men received mean scores of 3.70 in both categories.

In attitude toward relationships, the younger men received a higher mean score, expressing more

Table 8
Comparing Mean Scores of 100 Males and 100 Females for Age and Gender Differences in Attitudes Toward Solitary Subjects and Toward Relationships

| Age Group (N = 20) | Responses by 100 Males |  | Responses by 100 Females |  |
|---|---|---|---|---|
|  | Solitary Subjects | Relationships | Solitary Subjects | Relationships |
| 1. 7-10 | 4.0 | 2.0 | 4.0 | 3.08 |
| 2. 13-16 | 4.5 | 2.25 | 3.59 | 2.62 |
| 3. 17-19 | 3.69 | 2.0 | 3.86 | 2.62 |
| 4. 20-50 | 3.70 | 3.70 | 3.33 | 3.27 |
| 5. 65 + | 3.50 | 1.92 | 3.25 | 2.42 |
| Total Scores | 19.39 | 11.87 | 18.03 | 15.16 |
| Mean Scores | 3.88 | 2.37 | 3.61 | 3.03 |

positive attitudes than any other age or gender group. The older men received a lower mean score, expressing more negative attitudes than any other age or gender group.

In attitudes toward solitary subjects, the younger male adolescents received a higher mean score expressing more positive attitudes than any other age or gender group. The older women received a lower mean score, expressing more negative attitudes than any other age or gender group.

## Discussion and Summary

The findings of this study, built on previous findings, seem to support the assumption that the principal subjects of projective drawings tend to represent self-images. Respondents who drew human subjects, drew same-gender subjects to a degree that was highly significant at the .001 level of probability. For art therapists, this finding provides evidence that looking for overt and covert self-images in projective drawings is appropriate and productive. It should be noted, however, that even though comparatively few respondents drew principal subjects of the opposite sex, this finding may also have useful implications. These respondents, particularly the adults, tended to express *negative* attitudes toward opposite-gender subjects. Although the numbers were too small for statistical analysis, this observation suggests that further study with additional respondents would be worthwhile.

The study did not find that females draw pictures about relationships and that males draw pictures about independent solitary subjects. Although proportionally more females than males drew relationships, and more males than females drew solitary subjects, these differences were not statistically significant.

When responses were examined for particular attitudes, significant differences were found between age groups as well as gender groups. Males showed a stable and significantly higher frequency of drawings about assaultive relationships, as might be expected. It was surprising, however, to find that females showed significant age variability in drawings about assaultiveness. Female fantasies about being assaultive appeared to change with age. The proportion of women age 65 and older not only surpassed the proportion of older men as well as all other female age groups, but also surpassed the proportion of all male age groups combined.

When drawings about caring relationships were evaluated, it was surprising to find that males showed significant age variability. The proportion of younger men ages 20 to 50 not only surpassed the proportion of younger women as well as all other male age groups, but also surpassed the proportion of all female age groups combined. Again, the numbers were too small for statistical analysis, but hold promise for future studies.

The findings of this study raise questions about traditional expectations regarding ages and genders. It is usually expected that males are more aggressive and that females are more caring. Some investigators attribute these differences to social pressures and the way children are raised. Others look to biological causes, such as hormones which program males for aggression and competitiveness and females for caring and nurturing. One explanation for the finding about men age 20 to 50 fantasizing about caring relationships could be that they are biologically programmed to protect and care for their families. An explanation for the finding about older women fantasizing about aggression could be the effect of menopause on the production of estrogen and progesterone.

In any event, the findings seem to suggest that drawings can serve to identify age/gender differences in attitudes. If expanded, the findings may eventually provide norms on which to base more accurate expectations as well as information about emotional needs. For example, the older adults expressed more negative attitudes than any other age group. These findings suggest a need for thorough follow-up when drawings about sad, solitary subjects or stressful relationships are found.

On the other hand, it is important to note that many of the negative responses by older adults were characterized by sardonic or self-disparaging humor. The implication seems to be that art therapists who work with the elderly can expect to find not only frailties, but also wit and resilience.*

I hope some readers will be interested in joining this ongoing study by presenting the drawing task to additional respondents. If the sample populations can be expanded, some of the tentative findings reported here could be clarified.

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*For further details about the study of older adults, see Silver, in press.

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# 19. Identifying and Assessing Self-Images in Drawings by Delinquent Adolescents

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## Part I: The Study—Rawley Silver

Can art therapists identify self-images in drawings by troubled adolescents without meeting and talking with them? It is usually assumed that we are likely to project our own feelings into drawings by others unless meanings can be clarified through discussion. The assumption is examined in this study. Its purpose is to determine whether self-images can be identified even when discussion is not possible. If so, we could facilitate early intervention by expanding access to the ways adolescents see themselves and their worlds. Part One of this paper examines the assumption and an assessment technique. Part Two focuses on the adolescents who took part in the study.

### Background

Wadeson (1975) observed that the most frequent themes in drawings by hospitalized depressed patients were isolation, hopelessness, anger and being harmful to others. Her findings parallelled diagnostic criteria indicating that recurrent thoughts of death and aggressive behavior are characteristic of major depression (*Diagnostic and Statistical Manual of Mental Disorders, III R*). Schaffer & Fisher (1981) found that a majority of 100 children who committed suicide in Great Britain had manifested antisocial behavior, indicating that suicide is related directly rather than indirectly to aggression.

Silver (1988) examined drawings by 350 depressed and nondepressed subjects, finding that the depressed groups drew strongly negative themes to a significant degree, supporting Wadeson's observations and suggesting that strongly negative drawings are associated with childhood and adolescent depression. In a later study, 261 children, who responded to a drawing task, chose and drew principal subjects the same gender as themselves to a significant degree (Silver, 1992). In a follow-up study, 531 children, adolescents and adults also chose same-gender subjects to a significant degree (Silver, 1993). These findings suggested that the principal subjects of response drawings tend to represent self-images and that further investigation would be worthwhile.

The present study asks three questions:

1. Can self-images in drawings by delinquent adolescents be identified without discussing their drawings with them?
2. Do art therapists agree in identifying self-images?
3. Do social workers agree in identifying self-images?

The term self-image, as used here, refers to the char-

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JoAnne Ellison, a registered-board certified art therapist with experience in the special education of severe disorders of language (dysphasia) and court school juvenile offenders, is currently the educational assistant at a juvenile boys correctional facility. She has also provided art for children whose families are impacted with the problems of HIV or AIDS diagnosis.

acters in a drawing who represent the person who drew it, either intentionally or unintentionally.

## Method

The *Draw A Story* (DAS) Form B (Silver, 1993) task was presented to 53 male adolescents in a detention facility. After responding, they were asked to identify their self-images. Two art therapists also identified self-images: the therapist (Ellison) who interviewed them and a therapist (Silver) who did not meet them and knew only that they were adolescents incarcerated in California. The degrees of agreement between respondents and the two art therapists were then analyzed. In the second part of the study, three additional art therapists and five social workers identified self-images in 10 of the 53 drawings selected at random.

### *Judges*

Three of the five art therapists were credentialed professionals (A.T.R.); the other two had not yet received credentialing. Four of the social workers were credentialed professionals (MSW); one had not yet received credentialing. It is our understanding that one of the credentialed social workers had attended a conference of the Florida Art Therapy Association and a clinical art therapy program sponsored by the South Florida Art Therapy institute. It is not known whether the other four social workers received training in art therapy.

### *Subjects*

The subjects were wards of a Juvenile Court committed to a residential treatment facility for adolescents ages 13 to 18. The facility was managed by law enforcement personnel but included mental health personnel and classroom teachers. Most subjects were incarcerated for the first time. They included all students attending four English classes in the facility.

### *Procedures*

The drawing task was presented by Ellison to the four groups of students in their classrooms. After discussing their drawings with them individually, she recorded their responses and her own ratings. Retaining the data in a sealed envelope, Ellison forwarded the 53 drawings (identified only by number) to Silver who rated them blindly. After receiving Silver's ratings, Ellison then forwarded hers. The three other art therapists and the five social workers rated every fifth drawing. They identified self-images, if any, as well as attitudes, such as self-images portrayed as fortunate, unfortunate or aggressive. The data collected were then analyzed by Madeline Altabe, Ph.D.

### *The Instruments*

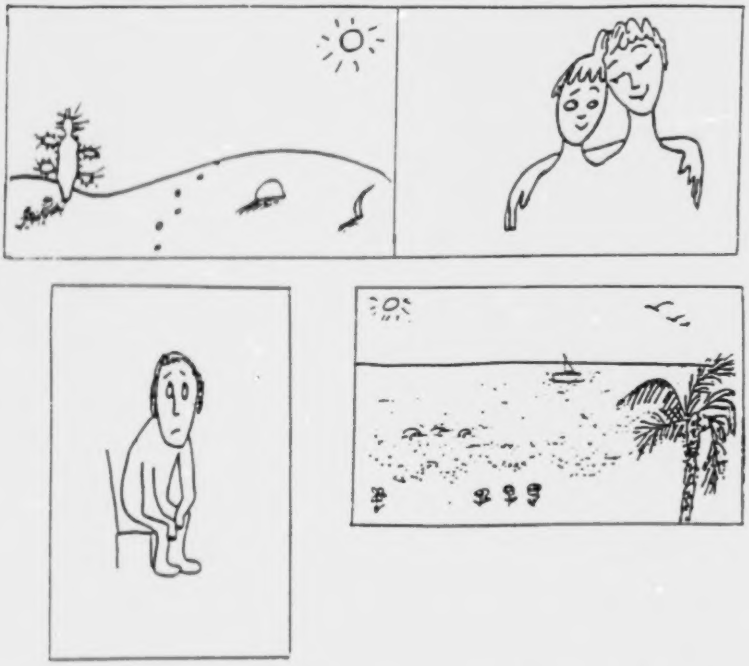
The *Draw A Story* (DAS) instrument (Silver, 1988, 1993) is a semi-structured interview technique for assessing depression and emotional needs. The drawing task asks examinees to choose two subjects from a set of stimulus drawings, imagine something happening between the subjects they choose, then show what is happening in drawings of their own. Respondents are encouraged to change the stimulus drawings and to add their own subjects and ideas, then write titles or stories after they finish drawing. Discussions follow in order to clarify meanings, then responses are evaluated on 5-point rating scales. The manual includes studies of reliability and validity. Ellison recorded her interviews and interpretations using the form shown in Table 1. The social workers and other art therapists used the form shown in Table 2.

The DAS instrument includes two sets of stimulus drawings, Forms A and B. Examples of Form B, the form used in this study are shown below.

### *Results*

Part One of the study addressed the question whether self-images can be identified even without discussion or knowledge of case histories. Of the 53 adolescents, 39 identified characters in their drawings as self-images. Ellison, who knew their histories and conducted the interviews, accurately matched 76.9% of the adolescents in identifying self-images. Silver, judging blindly, matched 71.8%. The average inter-scorer validity index was 74.4%. Across 53 respondents, the inter-scorer agreement found between Ellison and Silver was 94.3%.

Part Two of the study examined the agreements among five social workers and five art therapists. The average agreement among social workers was 54.0%, among art therapists 78.2%, and among the sub-group of registered art therapists (A.T.R.'s) 93.4%. Overall, the sample of 10 judges agreed 61.9% of the time. There was some inconsistency in rater's responses. Specifically, not all raters rated each individual and some raters gave an individual more than one rating.



*Examples of stimulus drawings in a Draw A Story, Form B. Copyright © 1987, 1992 by Rawley Silver.*

## Discussion

### *Agreement Among the Respondents and the A.T.R.'s*

The level of agreement among the two A.T.R.'s and the 39 respondents can be seen as an index of the validity of the self-image measure. Approximately three of four respondents agreed with the A.T.R.'s (74.4%). Ellison agreed with two respondents who disagreed with Silver, suggesting that the absence of discussion may have caused Silver to judge incorrectly two of the 39 responses.

Five respondents disagreed with both Ellison and Silver who agreed with each other in identifying self-images. Because their inter-scorer agreement of 94.3% suggests strong reliability, the five drawings that prompted disagreement were reexamined.

Figure 1, for example, is the response made by Chris, age 16, who was enrolled in the Special Education program because of perceptual-motor problems and scores on the Wide-Range Achievement Test (WRAT) which indicated that he performed at the 8th grade level in reading, the 7th grade level in math, and at the 4th grade level in spelling.

Chris selected two stimulus drawings: the dejected person seated on a chair and the couple with arms entwined, then simply copied them. Asked how he imagined the characters in his drawing would feel, he replied that the man was "sad and depressed" and the couple, "happy." They had received As on a spelling test whereas the man received F. Asked how he would feel if he had been included in his drawing, Chris replied that he "would be part of the group." The art therapists, judging independently, disagreed. Both identified the seated man as his self-image, suggesting that he felt a need to deny feeling sad or unfortunate as well as a need to gratify a wish-fulfilling fantasy.

Roy, age 14, who drew Figure 2, had selected stimulus drawings of an angry person, a sword and the couple with arms entwined. Asked how he imagined his characters would feel, he said the man was very angry, the girl and boy were happy and, if he were in the picture, he would be the boy with the girl: "I'm the good guy. I couldn't kill nobody." Both art

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Note: Names of all adolescents in this article are pseudonyms.

Table 1
Evaluating Self-Images in Responses to the DAS Task

Respondent ________ Age ________ Gender ________ Evaluator ____________________

Ask the following questions, filling in the blanks later on.

1. How do you imagine the ______________________ feels?
largest or only subject

Reply ____________________________________________

2. How do you imagine the ______________________ feels?
smallest subject

Reply ____________________________________________

(If useful, add other subjects)

Reply ____________________________________________

3. (optional) If you were in this picture, how do you imagine you would feel?

Reply ____________________________________________

Check where appropriate:

This respondent seems to identify with a subject portrayed as

unfortunate _____ fortunate _____ aggressive _____ other ____________________

with more than one subject _____ unclear _____ no apparent identification ____________________

Score on the 5-point scale ____________

Comments:

therapists identified the angry man as Roy's self-image, which they characterized as aggressive.

It may be that these and other agreements between Ellison and Silver merely reflect their knowledge of art therapy codes. On the other hand, their agreements may reflect perceptions of covert wishes and concerns. Chris may have been concerned about his performance on the spelling test and passing up (or wishing for) caring assistance. Roy, like many detainees, may have been concerned about losing his girl to a rival while he was incarcerated, and for his fantasy chose the stimulus drawing sword.

### *Variations in Agreement Among Art Therapists and Social Workers*

The strongest agreement (93.4%) was found in the sub-group of three registered art therapists, two judging blindly. Among the five registered and unregistered art therapists, the average agreement was

Table 2
Evaluating Self-Images in Responses to DAS Form B by 10 Male Adolescents in Detention

Evaluator ____________ Profession, Degree, Registration ____________ Date ________

Please look over the response drawings and indicate which subject (if any) seems to represent each respondent as an overt or covert self-image. Then enter a check-mark to indicate whether the self-image seems to be represented as fortunate, unfortunate, or aggressive. If, however, a respondent seems to identify with more than one subject, or with no visible subject, or if identification is unclear, please indicate with checkmarks in the appropriate boxes.

| Respondent | Seems to Identify with (Subject) | Portrayed as | | | More than One Subject | No Subject | Id is Unclear |
|---|---|---|---|---|---|---|---|
| | | Unfortunate | Fortunate | Aggressive | | | |
| 1. #5. | | | | | | | |
| 2. #10. | | | | | | | |
| 3. #15. | | | | | | | |
| 4. #20. | | | | | | | |
| 5. #25. | | | | | | | |
| 6. #30. | | | | | | | |
| 7. #35. | | | | | | | |
| 8. #40. | | | | | | | |
| 9. #45. | | | | | | | |
| 10. #50. | | | | | | | |

78.2%, among the five social workers 54%. These differences were surprising. Both social work and art therapy require training in psychological theories and practices, and both require a Master's degree. Nevertheless, as judges they tended to perceive the drawings differently.

For example, Figure 3 is a response by Larry who chose three stimulus drawings (king, queen and kitchen) then drew his parents cooking breakfast for him on Sunday morning. When Ellison asked where he might be in his drawing, he replied, "I'm in the other room at a table waiting for breakfast." The three registered art therapists agreed with Larry that he had omitted himself from his drawing. The seven

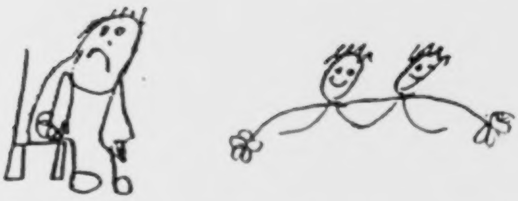


*Figure 1.* By Chris, age 16. "The man hear is very sad because he got an F on his spelling test. He is really depressed because he tried his hardest and faled. He doesn't have ansers to a better grade. The other people in this story are very happy. They both got As in their spelling test. They got that good grade by helping each other. The other person who got an F was mad that he had the chance to be part of these peoples group but he desided to do it alone."

other judges, however, identified the man, or both the man and woman, as Larry's self-image (see Larry's case history in Part Two).

How can the inconsistency among raters be explained? Perhaps the judges received inadequate instruction. Some did not assign categorical ratings to all drawings and others assigned more than one category to particular drawings. The inconsistency may also be explained by differences among judges in experience, training and skill. According to Tinnen (1990) the ability to perceive and interpret nonverbal messages expressed through art forms is based on unconscious mimicry. As he observed, mimicry underlies aesthetic sensibility, empathy, and emotions and belongs to the realm of primary process thinking, inaccessible to consciousness. If art therapists are artists with psychological training rather than mental health professionals with training in art, they may be using unconscious mimicry to perceive and interpret visual messages.

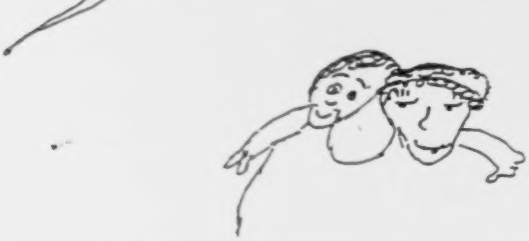


*Figure 2.* By Roy, age 14. "This man is very mad because a boy going with his girl friend. the two couple don't know her boy friend is watching, so he's going to grab the knife and kill both of them."

### *Observations*

Findings of the first part of this study suggest that discussion is not required for identifying self-images. Although discussion is preferable, and the more discussion the more accurate interpretations and assessments are likely to be, the findings suggest that discussion can be bypassed in order to expedite screening particularly in urgent situations, such as the need to identify someone who may be depressed or at risk for suicide, when circumstances or time limitations make interviews impossible.

Findings of the second part raise questions about the training and skills required for assessing the content of drawings. Can training programs for mental health professionals develop the requisite skills or are the skills limited to those with innate abilities combined with training in therapy? It may be useful to repeat this study with clearer instructions and larger samples of mental health professionals.

The findings also suggest that this assessment method can provide access to wishes, concerns and attitudes toward self and others. Access can facilitate early intervention by identifying adolescents who may benefit from clinical or remedial programs. Early intervention can provide them with greater understanding of themselves and their abilities and opportunities to explore alternative behaviors. The assessments can also provide their families and other professionals with greater understanding as well as additional opportunities to consider problems, abilities and alternatives.

## Part Two—JoAnne Ellison

This author, a registered art therapist and educator working as an assistant in the school department of the probation camp, led an investigation into the possible benefits of conducting the Silver *Draw A Story* (DAS) with the boys in this restrictive setting. It was hoped, in particular, that the DAS would provide a

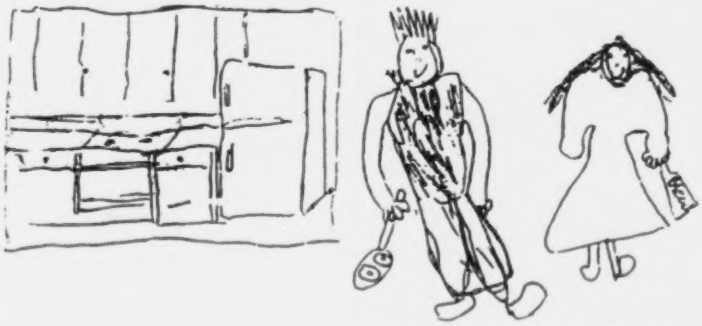


*Figure 3.* By Larry, age 13. "This is a piture of my Mom and Dad in the kitchen cook me a meal on a Sunday moring."

rapid assessment of the entire group of students so that more accurate and timely mental health referrals could be made. There is no formal art therapy program available in this county's probation facilities and very little art is offered due to educational priorities. Therapy with a half-time clinical social worker is offered to a few of the boys who either request help or are referred by probation personnel or educators. With conduct disorder, however, verbal therapy is generally considered less effective than structured milieu treatment, the preferred treatment being removal from the community and the initiation of a consistent behavior modification program with clear expectations and consequences (Lewis, 1989).

We are living in a time of heightened emotion and awareness concerning crime and adolescent misconduct. As we struggle to pass legislation to curtail juvenile crime, it seems more useful to attempt to gain further understanding of the youths involved. Unfortunately, these hard-to-reach groups are often unavailable for scrutiny because they are scattered, secretive, truant from school and possibly oppositional. Our access to a particular group of young male offenders in a minimum security, court-enforced milieu has enabled us to administer the DAS instrument. In addition to interviews and other investigations currently being conducted, the DAS may prove to be an in-depth, economical, rapid and valid route to greater knowledge concerning the condition of these young male offenders, thereby indicating related therapy.

Several general observations can be made about the particular group of young men studied here. Of the 53 boys who participated in the study (in camp, January 7, 1994) 7 were Caucasian, 10 Mexican or Mexican American, 17 African American, 5 Central American (mostly refugees from El Salvador), 6 Pacific Islanders (Tongan, Samoan, Filipino) and the remainder Asian or Native American. About one quarter of the group are special-education students with specific learning disabilities as observed from their discrepant achievement scores and other history. Intelligence testing is generally not available for these youths due to California court decisions that have made testing problematic because of perceived bias.

With not-to-be-ignored exceptions, most of the young men studied come from working class and poor families, living in low-income suburban neighborhoods. Not hard-core slums, these neighborhoods are often low-cost California housing tracts and apartments. The boys were not taking any psychotropic medications, with the only exception being one who was taking Dilantin for a seizure disorder. Many of the boys have been habitual drug and alcohol users, although after arrest they are not allowed either. A few youths are diagnosed alcoholics. Although most would deny this, some created drawings concerning people smoking "dank" or drinking.

Because adolescence is considered a time of identity formation, and because minority individuals live with psycho-social stressors that need to be recognized, ethnicity is important to consider in understanding these youth. Often they congregate in groups, some associated with organized gangs such as the Los Angeles Crips or the Bloods. More often, however, these boys are "wanna-bes" (imitators) who belong to self-styled "sets." Theirs is a world seemingly designed for maximum confusion for those outside of it—where "cool" means desirable, "bad" means good, S.O.S. means Sons of Samoa, and "nasty" means superb (to gain power and separation, adolescents have always changed the language). Here wearing the wrong color can get you murdered.

Friends provide "back up" for security, excitement and acceptance. Much of their group behavior concerns power, money and identity issues. Most are impulsive and all are diagnosed by the resident social worker as having conduct disorder. An underlying question in our investigation of the DAS, however, was: Could it help uncover compound diagnoses, including masked depression, dysthymia, cyclothymia, alcoholism, attention deficit disorder, post-traumatic stress syndrome or other conditions?

In this redwood-forested juvenile camp, with its striking contrast of the beautiful and the ugly, the power of the visual image is everywhere—from tattooed bodies to graffitied walls. The Hispanic and Pacific Island males generally have an affinity for drawing as it is culturally congruent for males to draw. Many blacks in the group were also talented and drew, but just as often they regarded art as not being masculine (one African American boy said "Hispanics draw, we rap"). For some of the youths, however, especially those with psycho-motor impairment, drawing was just another avenue toward ridicule and failure. Nevertheless, the DAS was given with very little resistance (in part because of the structured setting) and, for some, it was like giving food to the starving. Much of the spontaneous art among this group is stereotyped, like prison art; the DAS circumvents this stereotyping by providing symbolic pictures as well as by giving a written component, which aids in assessing the recalcitrant (and understanding emotions and circumstances that the subject may have psychologically denied [see case study of Elmer]), making the tool more personal as well as giving clues to the intent of the illustration.

Over a four-month period after the initial drawings in January, additional drawings were collected when possible. In total, 79 drawings, mostly DAS Form B and some DAS Form A, were studied by Ellison. Most drawings characterized the subjects as victims. Thirty depicted a man abandoned, most often appearing in hope of rescue—an image particularly evident in drawings completed shortly after arrival at camp. Wish-fulfillment drawings depicting successful love relationships were also very common. Often the youths depicted themselves as heroes, a Robin Hood or Sir Galahad-type character, defending the weak and warding off the enemy. There was an apparent sadness from missing girlfriends and evident fear that the girls would not be faithful. A few drawings created soon before the wards' release dates show ambivalence, fear of returning to the "jungle" and anxiety about feeling out of control. Of the eight recognized alcoholics, four drew wish-fulfillment fantasies and four drew depressed, afraid, anxious and sad figures; Clearly their drawing and writing concerned their current concerns and/or wishes. The following cases (with names changed) are offered as examples.

## Case Studies

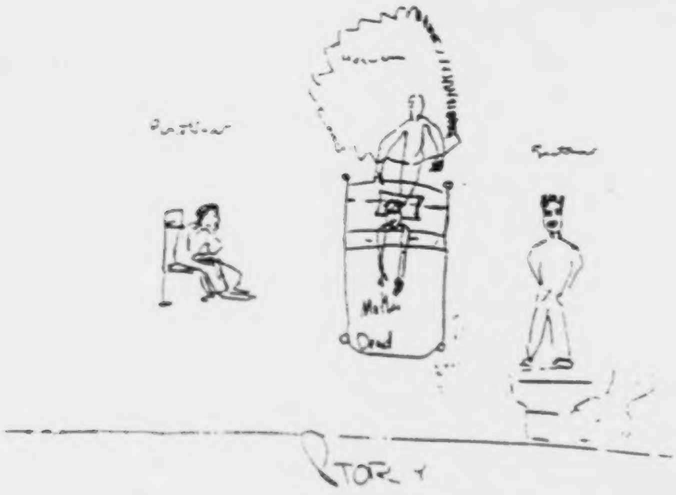
### *Elmer*

Elmer, age 16 (WRAT scores: Reading [R] 12th-grade level, Math [M] 10th-grade level and Spelling [S] 11th-grade level) was considered immature and angry. Unlike most of the boys who are small of stature, Elmer was 6'4" tall and weighed 240 pounds. His drawing of a sick mother ascending into heaven with two brothers, one on each side of her bed (Figure 4), however, was minute, occupying less than a third of the page. "The brothers both express emotions about their dead mother, who left them alone—one is sad; the other, very angry."

A second drawing, made just before his release, shows a boy breaking up with a girlfriend. "Although he is sad and depressed, he expresses his emotions in the form of anger and rage." This drawing was very direct, but equally small on the page as the Figure 4 drawing.

Elmer adamantly denied that either drawing had anything to do with him personally. He insisted that the drawings "are just stories" and that "my mother isn't sick." The camp staff, who often regarded him as a troublemaker, was puzzled by both his behavior and his choice not to go home on passes, especially because he had a younger brother who adored him living there. It was known that his father had been killed in an automobile accident a few years earlier and that his mother was living on Aid to Families with Dependent Children (AFDC) funding, with both a very ill grandmother and a drug-addicted uncle who had recently been released from prison. If the mother was not ill, could his image of her death indicate that she had become emotionally unavailable to Elmer when the father died?

Close rapport had been established with Elmer, both through art experience and tutoring for his high school equivalency certificate. He feared graduating as he didn't trust himself to avoid drinking with his friends, rather than going on to college. Quickly replying "yes" when asked if he would like to talk to



these brothers are both expressing emotions about their dead mother who left them alone one is sad the other is very angry.

*Figure 4.* By Elmer, age 16. "These brothers are both expressing emotions about their dead mother who left them alone one is sad the other is very angry."

the mental-health social worker, his request was facilitated, but not until shortly before his release. She saw him only once, afterward expressing regret that she hadn't seen him sooner. Several months later, his younger brother was arrested. Could it be that Elmer felt he needed to be the responsible father figure in his family? Perhaps he both feared, and was enraged at, the loss or unavailability of his mother? In the current triage environment, mental health services are limited to a half-time social worker and many individuals are not seen. This is an example of how a routine DAS assessment in place could have provided more timely assistance (Figure 4).

### *Salvador*

Salvador, age 16 (WRAT: R 4th grade, S below 3rd grade, M 4th grade) had been in special education prior to arriving at camp and was considered alcoholic. This small Hispanic boy appeared young and attractive, spoke some Spanish, but remained designated for special education as he had limited language skills. Considered to have a bad temper and to be potentially assaultive, Salvador was arrested for disturbing the peace, having been arrested previously for stabbing a student with a pencil. He did not adjust well at camp with his peers and comments of immature behavior and disrespect of staff appear frequently in his record. Salvador was raised with his two half siblings in a very violent, dysfunctional home. The heroin-addicted father, who disappeared early in the boy's life, had been incarcerated at the time of his marriage to Salvador's mother. A few years before Salvador's arrival at camp, his mother was killed from bullet wounds in a gang-related incident; at that time he was sent to live with an equally dysfunctional aunt and uncle. Salvador expressed dislike for this living situation and refused to go home on passes. A year before coming to camp, his best friend was stabbed in a gang-related killing. Salvador had often been seen visiting the grave site of his deceased friend and was heard to say, "If I had a gun Carlos, I'd be where you are now." He had also mentioned having little expectation to live much longer and often looked depressed, as if on the verge of tears, and had low energy. His writing concerned hopeless, sad themes,

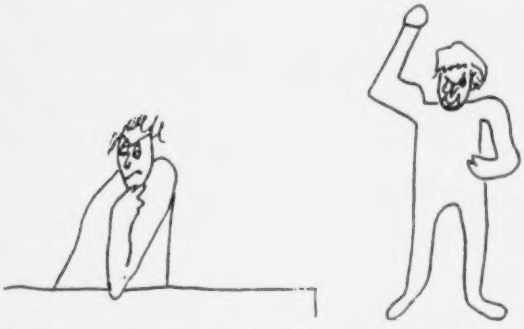


*Figure 5.* By Salvador, age 15. "Two men are angry is life because nothing gos there way and they didn't grow up with a mother or a father."

as seen in DAS (Figure 5). A few weeks after completing this drawing, Salvador was removed from camp on a suicide watch because he was heard to say that he was going to kill himself. Two weeks later, he was disciplined for angry acting-out. Obviously depressed and having trouble accepting the losses in his life, from the time of his admission he was receiving sessions with the social worker, who felt he was "not relating to her." Three weeks after his final release and return to the unsatisfactory home environment Salvador took a gun and killed himself.

### *Pedro*

Pedro, age 16 (WRAT scores: R 10th grade +, S 8th grade +, M 7) is a muscular, short youth. He is of above-average intelligence and enjoys drawing. Although English is his second language, he passed high school with little difficulty and he talks of going to college. He is a delightfully social and polite young man at camp. His single mother, who has an excellent job and has arranged for her son to work with her on his release, initially brought the family from El Salvador to South Los Angeles, where Pedro's 19-year-old brother was then killed in a gang-related activity; his father is unknown. Pedro misses the excitement of his life in Los Angeles; he was sent to camp in this county when he stole the family car and tried driving back to see his friends. Pedro has a long scar from his sternum to his umbilicus, a large scar on one arm and three other round scars, all from bullet wounds (he has been shot five separate times). He enjoys taking his shirt off as he receives great admiration from the

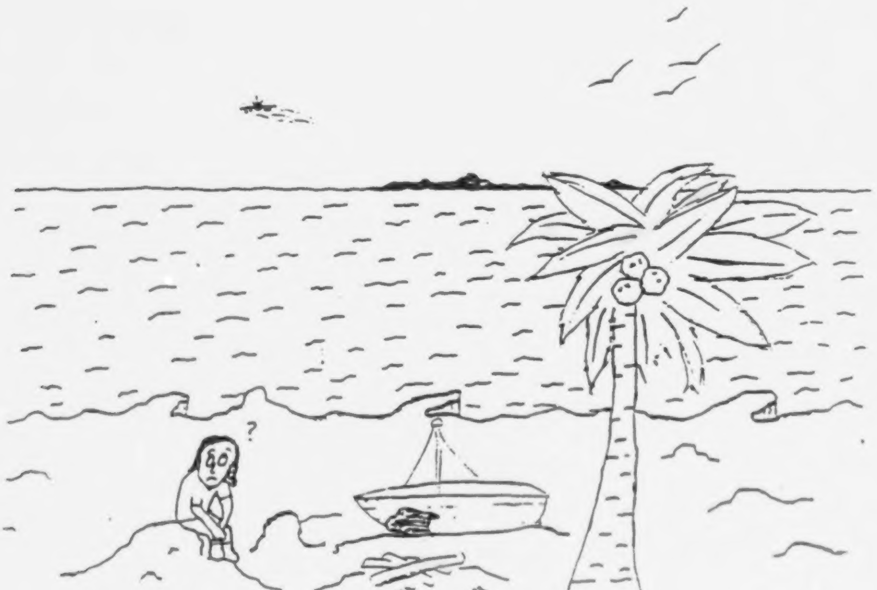


*Figure 6.* First drawing by Pedro, age 16. "He's boat is damage he don't know how to fix it and he's worried. but he doesn't realize that a plane came to rescue him! from the other island."

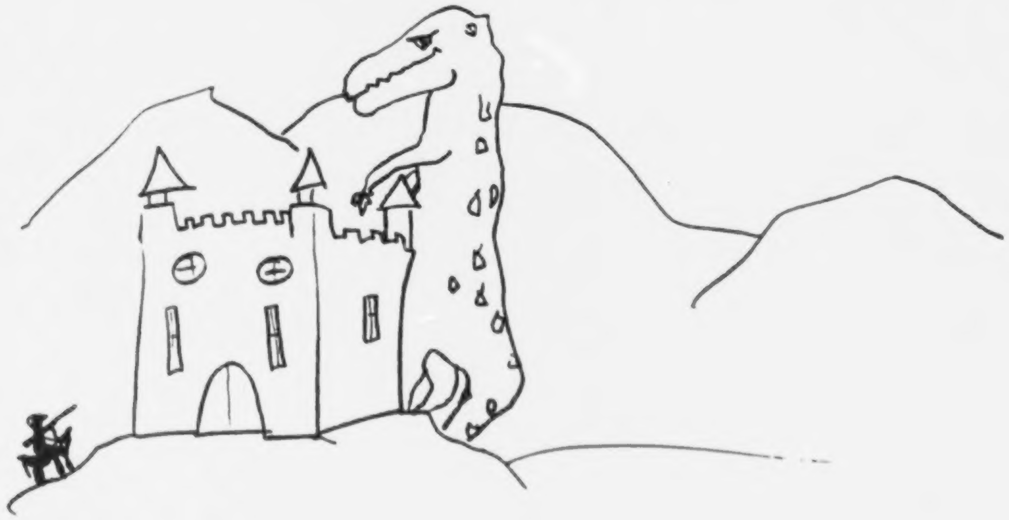


*Figure 7.* Second drawing by Pedro. "The dragon is going to destroy the castle, but the brave knight will defeat the dragon."

other boys for his scars. Pedro seems to need to prove his bravery and refuses to "back down." After the last shooting incident, in the attempt to save her son's life his mother again relocated the family, this time to Northern California.

Pedro's first drawing (Figure 6) was completed in class with the group shortly after he arrived at camp. Form A of the DAS (Figure 7) was given to him about a month before his release. This drawing shows deeper involvement than the earlier one, with a brave knight defending a very large castle against a huge monster. The knight is exceedingly small. The social worker recognized that depression and loneliness were factors in Pedro's behavior. Pedro had an excellent behavior record at camp and was released early; however, since the research for this paper was completed he has been arrested again.

### *Richardo*

Richardo, age 17 (WRAT: R 11th grade, S 9th grade, M 10th grade) is a soft-spoken Chicano living in a neighborhood well-known for crime and drug sales. He is resourceful and bright, possibly gifted—he easily passed his high-school equivalency tests—and has shown considerable initiative and no behavioral problems when in school or at camp. Though he seems to have a supportive family, he belongs to a gang and was arrested for possession of rock cocaine for sale. It appears that he is an example of the entrepreneurial, defiant individual described by Jankowski (1991). He apparently left school to go into the lucrative drug business. His artistic skill is evident in his first DAS drawing (Figure 8), done out of class shortly after his arrival, which expresses his isolation from his girlfriend and his dislike of juvenile probation camp. Another drawing (Figure 9), completed just before his release, shows a hero defending the weak. He might do better if moved to a different neighborhood and would benefit from an Hispanic mentor who could help him fulfill his considerable potential.

### *Grant*

Grant, age 16 (WRAT: R 8th grade, S 7th grade, M 7th grade) more than most boys seems to be a victim of circumstances. His African American father has been in and out of prison most of his adult life. His mother, a Native American, has been an habitual drug user, resulting in her infection with the HIV virus. Grant's sister, age 9, was born infected and has been frequently hospitalized. The family subsists on Social Security and AFDC because the mother is unable to work. The grandmother, who lives near the family and has cared for Grant much of the time, was

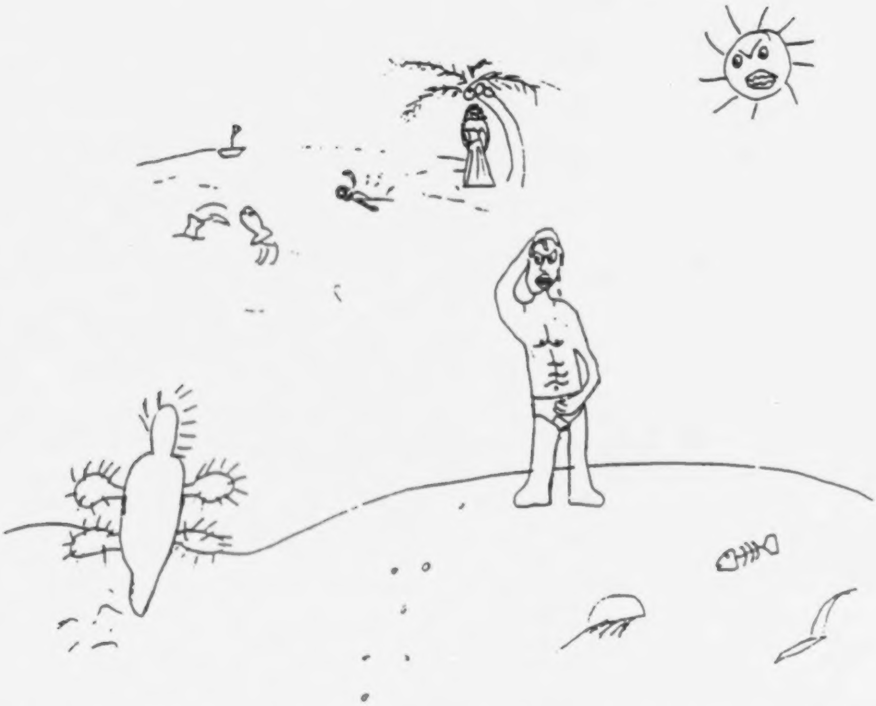


*Figure 8.* First drawing by Richardo, age 17. "This guy is mad and obviously he is hot and he is having visions of a beautiful girl. He is lost in the desert and has no food. The sun is beating down on him. If he is not fed soon he will die. He hates the deserts he doesn't know how he got the. He is having visions of water and fishing. He hates the world and how it is treating him. He hates where he is at."

recently diagnosed with lymphoma; she died shortly after Grant's release from camp.

Although Grant's behavior is very active and distractible at times, he is generally amusing, cooperative and cheerful, with a wide, toothy grin and a very loud voice. His mother suggested he might have Attention Deficit Disorder. Two years prior to his present offense of selling rock cocaine to a police informant, Grant had been referred to the probation department for sodomy with a young boy, age 6, who resided in his neighborhood. Apparently this was a one-time offense, for which it was required that he attend a sex offenders group for a year. After release from camp, Grant was again arrested for assault with a deadly weapon and was placed in a court-ordered, out-of-home, juvenile probation facility in another county. As Grant's situation at home deteriorated, his drawings became more defended. His last drawing and story, done at juvenile hall after his second arrest, was of a king painting a castle; according to Grant he was "doing fine." The camp social worker feels he is depressed.

His original drawing (Figure 10) clearly seemed unusual; it may be that both figures express aspects of Grant's personality. Dr. Silver and JoAnne Ellison both chose the aggressor as the most likely self-image. Questions unaddressed in therapy, but indicated in this assessment, might include: Did the youth possibly fear homosexuality in himself? Could he have been a victim of sexual abuse earlier in his life?

### *Larry*

Larry, an African American, age 13 (WRAT: R 3rd grade, S 3rd grade, M below 3rd grade) has been living alone, selling drugs to pay the rent. He has fathered two children—his first child conceived when he was age 10½; his second, a son born this year, to whom Larry writes letters apologizing for not being able to see him and promising to love him. Larry's

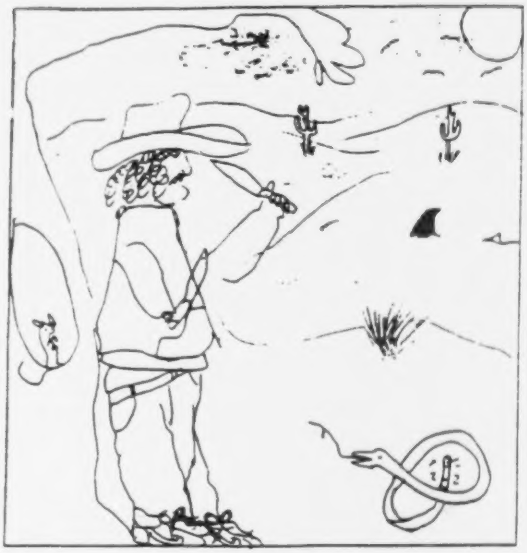


*Figure 9.* Second drawing by Richardo. "The rattle snake wants its victom but, dase it know Ricardo is a tough criminal that isn't scared of snakes."

parents were separated at the time of his birth and he was raised by his grandmother. The whereabouts of his mother, who had problems with substance abuse, are presently unknown. His father, who has recently returned from prison, now wants Larry to live with him and his girlfriend after his release from camp. Although Larry earns home passes on weekends to be in his father's custody, he says he is going to live on his own and care for his family.

Described as sophisticated beyond his years, Larry is talkative, impulsive and aggressive. He often fights with his peers and gets into trouble at camp. Larry belongs to an inner-city urban gang and, according to his parole officer, "lies, cheats and steals." His offense was assault with a deadly-weapon and attempted extortion. Police observed the youth knocking down his drug-customer victim and kicking her repeatedly.

Larry's response drawing (Figure 3, Part 1) seems to express wishes for the parental nurturing he missed as a child. He was unknown to the mental-health social worker.

## Conclusions

This study suggests that a structured art assessment, such as the DAS, Forms A or B, can be useful in the evaluation of conduct-disordered juveniles. It is possible to present the DAS in a group setting to be evaluated later by an art therapist, even if the therapist is unable to speak directly to the subjects. Access to case histories and information is useful, however, as they can often give clues to highly idiosyncratic drawings and stories. Possibly this instrument could be used periodically in English classes and assessed by an art therapist available for this purpose, if it was agreed to be valuable by the overseeing teachers, mental-health personnel and probation counselors.

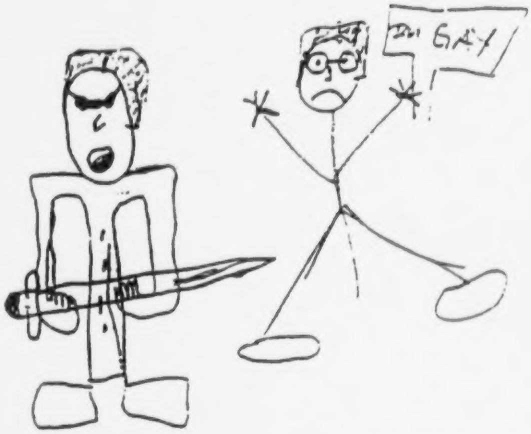


*Figure 10.* By Grant, age 16. "Once there was a prince who didn't like gays. Till one day this gay guy made a pass at the prince. Oh no the gay guy said because he had a prince chasing him with a sword. The prince caught the gay guy and stabbed him. The prince walked away while the gay guy was screaming (I though you loved me)."

The juveniles tended to draw isolated or aggressive, angry figures when newly incarcerated. This could indicate reactions to their immediate situation or underlying feelings of abandonment. Although they tended to draw wishful, loving relationships with girls, they often drew angry, aggressive drawings against male authority figures. The tendency to draw same-gender subjects found in previous studies was again confirmed, supporting the assumption that the self tends to be the subject of projective drawings.

Depression can be an influencing factor in conduct disorder. The suicide of Salvador seems to confirm the observation by Schaffer and Fisher (1981) that suicide is related directly rather than indirectly to aggression. Originally it was hoped that aggressive or "acting out" individuals could be differentiated from depressed or "acting-in" persons. It appears that this is not possible, as many of the subjects, though depressed, were able to avoid feelings by "acting out" when away from camp, often with groups engaged in seemingly exciting activities to these juvenile offenders. In the structured setting of the probation camp, with highly imposed control, they became more sad, anxious and fearful, and demonstrated more self-destructive behavior. Particular circumstances, substance abuse and opportunity are all influencing factors that need to be considered in determining whether individuals will either "act out" or feel depressed (see case study of Salvador, for an example of "acting-in"; case studies of Pedro and Larry are examples of juveniles "acting out").

It has also been suggested that in some cases "the assessments could be used to communicate with family therapists or probation officers who could be working with relatives and friends in the home setting to which the juvenile is assigned after probation camp experience. Families feel less overwhelmed and helpless, if they have increased understanding of their distressed member and can set concrete goals toward alleviating some of the problems" (editorial critique).

Silver has stated that this access to wishes, concerns and attitudes toward self and others could provide opportunities to identify youth at risk and a need for thorough diagnosis, early intervention and remedial programs.

The drawings help to understand the immediate concerns and sometimes the underlying dynamics of conduct-disordered individuals. Many of these juveniles are more kinesthetic than verbal and many have the language handicap of inadequate English (it cannot be assumed that they are literate in any language). It appears from this study that both sad and aggressive stories may indicate depression and that happy fantasies may indicate denial on the part of equally depressed youths who may be more resistant to treatment.

Further studies and longitudinal follow-up are indicated. Studies of conduct-disordered juvenile girls and of non-law violating juveniles would be helpful for comparison. A study of the DAS translated into Spanish might prove interesting, particularly because drawings seem to be especially useful with this population.

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# 20. Sex Differences in the Solitary and Assaultive Fantasies of Delinquent and Nondelinquent Adolescents

*Adolescence*, Vol. 31, No. 123, 1996

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ABSTRACT

Self-images expressed in response to the *Draw-A-Story* task were examined for differences in gender, age, and delinquency. Subjects included 64 adolescents in detention in California and 74 normal controls attending schools in Ohio, New York, and Florida; 82 were males (53 delinquents, 29 controls); 56 were females (11 delinquents, 45 controls). Their ages ranged between 13 and 17. The first analysis evaluated whether gender or delinquency was related to self-image scores. No significant differences were found. The second analysis evaluated whether the proportions of drawings about solitary subjects or assaultive relationships differed depending on gender or delinquency. Significant gender differences were found in both solitary and assaultive content. The findings of assaultive content were reversed for solitary content. For assaultive content, the differences in proportion between male and female control subjects reached significance. The difference between male and female delinquents did not reach significance. Control males differed significantly from control females, but delinquent males did not differ significantly from delinquent females. Solitary content also distinguished between delinquent and control groups, as well as gender. The gender difference was large in the control group but small in the delinquent group. Delinquent female drawings were more like the male drawings of both groups. Thus greater gender differences were found among normal adolescents than among delinquent adolescents. Implications of the findings for access to fantasies and to screen for emotional needs are discussed.

The purpose of this study was to investigate differences in attitudes toward self and others expressed through drawings and stories. An extension of earlier studies, the focus was on delinquent and nondelinquent adolescents who responded to a drawing task: respondents were

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The author wishes to thank the following teachers and art therapists who volunteered to administer the DAS task to the adolescents who participated in this study: Sylvia Corwin; Jo-Ann Ellison, A.T.R.; Patricia English; Hope Larris-Carroll; and Jo-Ann Lizio-O'Brien, A.T.R. Madeline Altabe, Ph.D., provided the statistical analyses and Tables 1 and 2. Their assistance is greatly appreciated.

examined for differences in gender and delinquency, as scored on a rating scale that ranges between strongly negative content, such as drawings about mortal danger, and strongly positive content, such as drawings about loving relationships.

*Background*

Several studies have found that males focus on independence and competition while females focus on affiliation and relationships (Tannen, 1990; Gilligan, Ward, Taylor, & Bardige, 1988). A study sponsored by the American Association of University Women (1992) found that girls experience a decline in self-esteem during early adolescence.

Stapley and Haviland (1989) found gender differences in the self-reports of emotional experiences by adolescents. Girls experienced emotions in affiliative interactions. Among boys, outer-directed negative emotions predominated whereas inner-directed negative emotions were more characteristic of girls. They also found that gender differences in psychopathology parallel gender differences in normal emotional functioning.

Rhodes and Fisher (1993) found that inner-city adolescents in a court diversion program were more likely than females to engage in aggressive offenses.

Although these investigators depended on verbal interviews and self-reports, drawings can also be used for access to attitudes and fantasies. It is theorized that attitudes evident in verbal conventions can also be evident in visual conventions and that drawings tend to be less guarded than talk. A study of 436 children, adolescents, and adults found that males tend to draw fortunate subjects living in dangerous worlds while females portray their fortunate subjects in pleasant worlds, unfortunate subjects in unpleasant worlds (Silver, 1987). A subsequent study of 531 children, adolescents, and adults also found gender differences in drawings about solitary objects and drawings about interpersonal relationships (Silver, 1993a). Across five age groups, males tended to express negative attitudes toward relationships and showed significantly stable and a higher frequency of drawing about assaultive relationships. Females expressed both positive and negative attitudes toward relationships. Larger proportions of younger adolescent girls than any other adolescent age group drew pictures about stressful relationships. They also expressed more positive attitudes toward solitary subjects than did any other male or female age group. A third study included 203 females and 157 males, most of whom had been diagnosed as clinically depressed, emotionally disturbed, or learning disabled (Silver, 1993b). These respondents expressed more negative than positive attitudes toward both solitary subjects and relationships. Across five age groups, 41% of the females and 49% of the males expressed negative attitudes toward solitary subjects. In drawings about relationships, 72% of the males drew assaultive or stressful relationships while females were both positive (29%) and negative (34%) as well as ambivalent or ambiguous (37%).

The question as to whether the principal subjects of drawings represent self-images has also been addressed. Respondents drew pictures about principal subjects of the same gender as themselves to degrees found significant at the .001 level of probability (Silver, 1992, 1993a, 1993b).

## METHOD

In the present study, 138 adolescents were asked to respond to the *Draw-A-Story (DAS)* task (Silver, 1988/1993). Their responses were divided by gender and delinquency into drawings about solitary subjects and drawings about relationships, then evaluated on a 5-point rating scale based on attitudes toward the self-images or relationships portrayed. Their mean scores were also analyzed and compared.

### *Subjects*

The subjects included 82 boys and 56 girls ages 13 to 17. The delinquent subjects included 53 boys and 11 girls, wards of a Juvenile Court committed to a residential treatment facility for adolescents in California. Most were incarcerated for the first time. They included all students attending four English classes in the facility who responded to the stimulus drawings in *DAS Form B*, presented in their classroom by a registered art therapist.

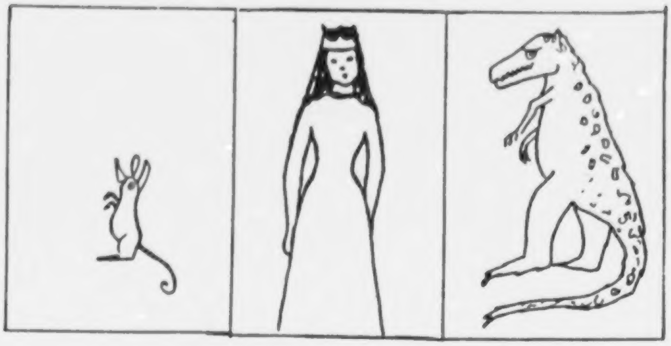
The control subjects included nondelinquent, presumably normal adolescents, 29 boys and 45 girls, attending four schools in Ohio, Florida, and New York. They included all students attending English or other classes in their schools. They responded to the stimulus drawings in *DAS Form A*, presented by classroom teachers or registered art therapists.

### *Instrument*

*DAS Forms A* and *B* are different sets of 14 stimulus drawings of people, animals, places, and things. Examples are shown in Figure 1. Previous studies have shown an equivalence between responses to the two sets of stimulus drawings.

The drawing task asks examinees to choose two subjects from a set of stimulus drawings, imagine something happening between the subjects they choose, then show what is happening in drawings of their

Figure 1



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own. They are encouraged to change the stimulus drawings and add their own subject matter and ideas, then write brief stories about what is happening in their drawings.

The assessment instrument is a continuum ranging between 1 and 5 points. The score of 1 point is used to characterize strongly negative content, such as drawings about assaultive relationships or sad solitary subjects. The score of 5-points is used for strongly positive content, such as drawings about loving relationships or successful solitary subjects. Scores of 2 and 4 points are used respectively for moderately negative and moderately positive responses, and the intermediate score, 3 points, for ambiguous, ambivalent, or unemotional responses.

## RESULTS

The first analysis examined whether gender or delinquency were related to self-image scores on the rating scale. A group (delinquent versus control) by gender (male versus female) 2 × 2 ANOVA was conducted on the self-image ratings. No significant results were obtained (the male mean score was 2.52, the female mean score, 2.92).

The second group of analyses examined whether the proportions of responses with assaultive or solitary content differed depending on gender or delinquency. These proportions are shown in Tables 1 and 2.

Overall, males and females differed on both assaultive content (Chi-square (1) = 11.00, $p < .01$) and solitary content (Chi-square (1) =

**Table 1. Assaultive content in the drawings of delinquent and control, male and female adolescents.**

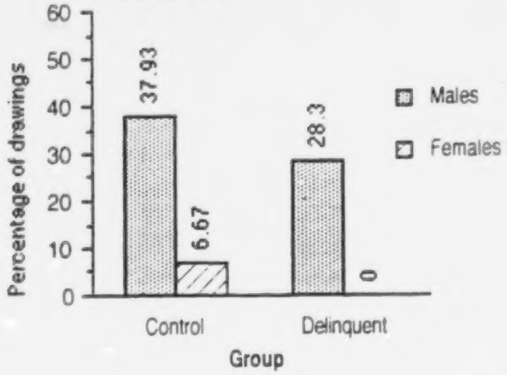
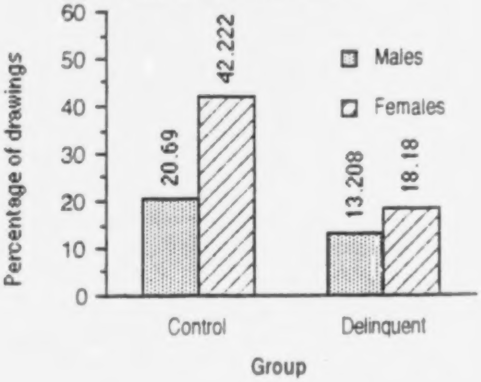


**Table 2. Solitary content in the drawings of delinquent and control, male and female adolescents.**



6.33, $p < .05$); 31.7% of the males drew pictures about assaultive relationships as compared with 5.4% of the females. The effect was reversed for solitary content: 37.5% of the females drew pictures about solitary subjects as compared with 15.9% of the males. Solitary content also distinguished between delinquent and control groups: 33.8% of the control subjects drew solitary subjects as compared with 14.1% of the delinquent subjects. These main effects were modified by interactions indicating that the differences were not uniformly distributed across groups. For assaultive content, the interaction was: Chi-square (1,1) = 12.01, $p < .001$. For solitary content, the interaction was: Chi-square (1,1) = 8.82, $p < .01$.

In drawings about assaultive relationships, the difference in proportion between male and female control subjects reached significance (Chi-square (1) = 9.11, $p < .01$). The difference between male and female delinquents did not reach significance: 28.3% of the male delinquents drew assaultive relationships; no female delinquents drew assaultive relationships. Although control males differed significantly from control females, delinquent males did not differ significantly from delinquent females. Aggressive humor was found in 45.4% of drawings about assaultive relationships by control males but not found in any other group.

In drawings about solitary subjects, the gender differences were again large in the control group, but small in the delinquent group. Drawings by the delinquent girls were more like drawings by the boys in both groups. When *negative* attitudes toward solitary subjects were examined, gender differences in both delinquent and control groups were found. Proportionally more girls than boys drew sad or helpless solitary subjects (delinquent girls, 18.1%; control girls, 17.8%; delinquent boys, 9.4%; control boys, 6.9%). When positive attitudes toward solitary subjects were examined, the control groups predominated: control girls, 20%; control boys, 13.8%; delinquent boys, 3.7%; delinquent girls, 0).

## DISCUSSION

When mean scores were examined, no differences in gender or delinquency were found. Differences appeared, however, when drawings about assaultive relationships or solitary subjects were examined more closely.

### *Assaultive Relationships*

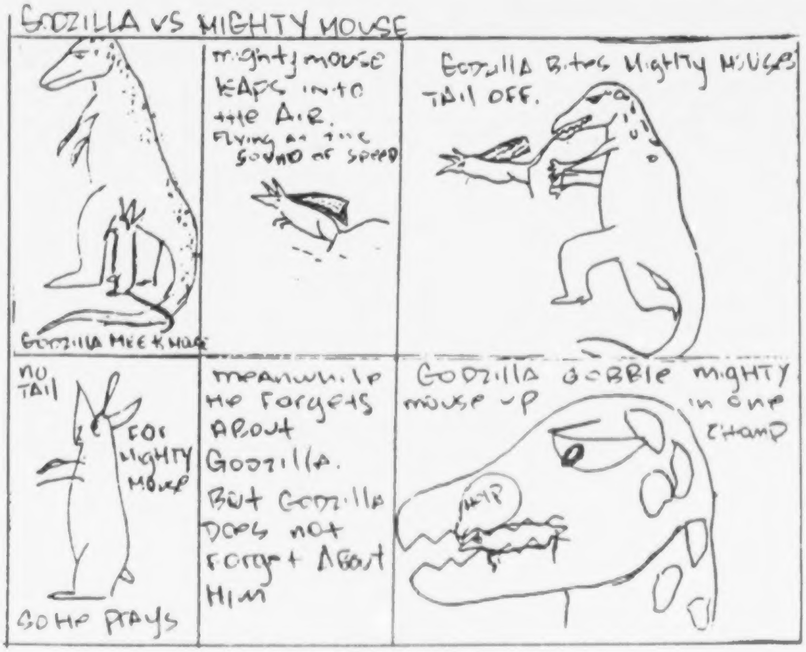
As before, more boys than girls drew pictures about assaultive relationships. It was surprising, however, to find that proportionally more nondelinquent than delinquent boys drew assaultive relationships, as shown in Table 1.

Perhaps the finding can be explained by the difference between fantasizing about violence and acting violently. A boy who has internalized prohibitions against acting out biological drives, may fantasize more than one who commits assaultive acts. It may also be that incarceration for antisocial behavior inhibited expressing assaultive fantasies.

Although most drawings about assaultive relationships seemed to express wish-fulfilling fantasies, others seemed to express conflict or denial. Among the delinquent boys who drew assaultive fantasies, 47% seemed to feel a need to justify the violence they expressed. For example, characters who seemed to be self-images killed bad guys in order to protect innocent victims, or retaliated only after being hurt. One delinquent, age 15, copied and embellished the stimulus drawing of a loving couple, then added a fist striking the girl's face. His story: "This boy was with my girlfriend and I caught them together and beat her up."

A similar proportion of nondelinquent boys who drew assaultive fantasies (45%) used aggressive humor, perhaps a form of defense or denial. To illustrate, Figure 2 is the response of an 18-year-old who seems to identify with Godzilla in his drawing, biting off the mouse's tail

Figure 2


GODZILLA VS MIGHTY MOUSE
GODZILLA MEEK MOUSE
mighty mouse leaps into the Air. Flying at the sound of speed
Godzilla Bites Mighty Mouses TAil OFF.
no TAil
For Mighty Mouse
So he prays
meanwhile he forgets About Godzilla. But Godzilla Does not forget About Him
GODZILLA GOBBLE MIGHTY MOUSE UP in one chomp
HELP

before chomping him, using humor to mask or deny a murderous wish.

No humor was found in the assaultive fantasies of delinquent boys or nondelinquent girls, and no delinquent girl drew assaultive fantasies.

### *Solitary Subjects*

As in previous studies, most respondents drew pictures about relationships, perhaps because they were asked to draw something happening between the subjects they chose. Nevertheless, some chose stimulus drawings of inanimate objects or landscapes and associated them with solitary human or animal subjects.

In the present study, more girls than boys drew pictures about solitary subjects, and again the gender differences was larger among the nondelinquent adolescents, as shown in Table 2.

In addition, proportionally more girls than boys expressed negative feelings about the solitary subjects they portrayed. Regardless of delinquency, more than twice as many girls as boys drew sad, isolated, or endangered solitary subjects, scored 1 point, as shown in Table 3.

One delinquent girl, age 17, simply traced the four stimulus drawings she chose (sad, angry, and sulking solitary figures, and a kitchen environment). Her story: "Today I feel lonely like I don't have anyone. But other days I feel like fighting and just be angry at the world. And other days I feel like I'm just there with nothing to do. And then sometimes I just be hungry to death and just be wishing I could go fix me something to eat."

Figure 3 is the response of a nondelinquent girl, age 14, who chose stimulus drawings of a princess and a castle. Her story: "The princess is depressed because everyone assumes because she lives in a castle and dresses well, she is rich and, therefore, stuckup!" The princess seems to be herself expressing an immediate concern.

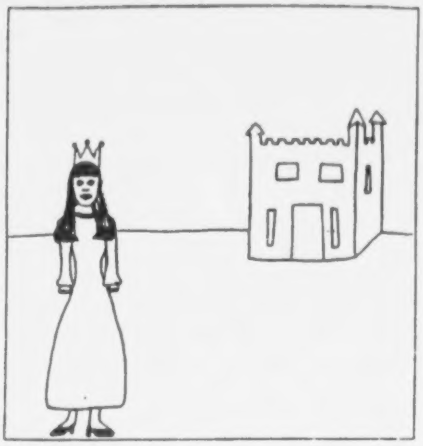
At the other end of the scale, proportionally more nondelinquent than delinquent adolescents drew solitary subjects achieving goals.

Table 3: Characteristics of Solitary Subjects in Drawings by Delinquent and Nondelinquent Adolescents

| | Sad/Threatened | | Successful | |
|---|---|---|---|---|
| 53 Delinquent Boy | 5 | 9.43% | 2 | 3.77% |
| 11 Delinquent Girls | 2 | 18.18% | 0 | 0 |
| 29 Nondelinquent Boys | 2 | 6.90% | 4 | 13.79% |
| 45 Nondelinquent Girls | 8 | 17.78% | 9 | 20.00% |

1 ,

Figure 3



Successful self-images appeared more often in drawings by nondelinquent girls than nondelinquent boys. No delinquent girls drew successful solitary subjects.

In considering the implications of these findings, it should be kept in mind that the delinquent and nondelinquent groups were exposed to different sets of stimulus drawings. Since the studies cited earlier suggest that the principal subjects of response drawings represent self-images, negative drawings about solitary subjects (scored 1 or 2 points) seem to represent negative self-images, while positive drawings (scored 4 and 5 points) represent either positive self-images or wish-fulfilling fantasies.

Strongly negative drawings about solitary subjects (scored 1 point) may indicate feelings of withdrawal, isolation, or rejection. As such, they could provide opportunities for identifying emotional needs as well as for early interaction.

The finding that approximately 18% of both delinquent and nondelinquent girls expressed negative feelings toward self-image solitary subjects concurs with the findings of other investigators, cited earlier, that adolescence seems to be a particularly difficult time for some girls, and that girls tend to experience emotions in affiliative interactions, even when drawing solitary subjects, as suggested by Figure 3. However, it should be noted that another 20% expressed positive feelings toward the solitary subjects in their drawings.

None of the delinquent girls expressed positive feelings toward the solitary subjects. It may be that the sample of delinquent girls was too small to warrant comparison with nondelinquent girls, or that delinquent girls are more at risk. The finding that proportionally more nondelinquent then delinquent adolescents drew successful self-image subjects suggests that delinquent behavior when followed by incarceration, dims or extinguishes wish-fulfilling fantasies and hopes for success.

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# 21. Sex and Age Differences in Attitudes Toward the Opposite Sex

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## Abstract

*This study examined fantasies about the opposite sex expressed by 116 children, adolescents, and adults responding to the Drawing from Imagination task of the Silver Drawing Test of Cognition and Emotion. Response drawings and their titles were scored on a 5-point scale ranging from negative to positive portrayals. Results indicated that both males and females expressed more negative than positive feelings toward subjects of the opposite sex. Males were more negative than females. Both male and female scores peaked at the 2-point level, portraying opposite-sex subjects as unfortunate or ridiculous. An analysis of variance found male responses significantly more negative than female responses. Implications for clinical discussion and intervention are discussed.*

In two previous studies, it was found that most children and adults drew fantasies about subjects the same gender as themselves when responding to a stimulus drawing task (Silver, 1992, 1993). A few, however, drew fantasies about subjects of the opposite sex, portraying them as menacing or unfortunate. Why did they associate these subjects with negative feelings? Did their responses reflect preoccupation with troubling experiences, and if so, opportunities for clinical intervention? The finding suggested that examining the responses of larger samples of children and adults might be worthwhile.

## Background

For almost 50 years clinicians have used drawings as projective instruments to assess emotional and cognitive needs (Buck, 1948; Goodenough-Harris, 1963; Hammer, 1967; Koppitz, 1968). Theorizing that human figure drawings portrayed unconscious self-images, Machover (1971) devised the Draw-A-Person test, which includes two tasks: the first, draw a person; the second, draw a person of the opposite sex. She observed different treatments of male and female figures. Infantile, sexually immature males tended to draw kindly representations of the male figure in profile, whereas the female figure, "an obvious, mother-image is drawn in front view with virility and hostility constituting the dominant graphic features" (p. 100). Machover also observed that most responses to the first task depicted subjects the same gender as the individuals who drew them.

Since then, it has often been assumed that children and adults represent themselves, directly or indirectly, when responding to projective drawing tasks. In search of quantitative information about the assumption, drawings by 261 children were examined comparing their genders with genders of the subjects they portrayed and taking into account verbal clues, such as the use of pronouns and the subjects of sentences (Silver, 1992). Results indicated that most of the boys drew pictures about male subjects; most of the girls drew female subjects. A *chi square* analysis found that those who drew human subjects, drew subjects the same gender as themselves to a degree significant at the $p < .001$ level of probability.

A few children, however, drew fantasies about menacing adults of the opposite sex. To illustrate, a 10-year-old girl selected stimulus drawings of an older man, a mouse, and a refrigerator, and then drew Figure 1, "The Mad Scientist!" An 8-year-old boy chose stimulus drawings of a bride, knife, snake, and dog, and then drew Figure 2, "The lady getting married to a dog who wants to kill him." Even though it is unclear who the murderer or the victim might be, it is clear that the stimulus-drawing bride triggered strongly negative associations.

The study also found that, in general, both girls and boys had positive associations with autonomous subjects, showing them engaged in pleasurable activities. Boys outnumbered girls four to one in drawings about assaultive relationships; no gender differences were found in drawings about friendly or loving relationships.

A subsequent study included adolescents and adults as well as children (Silver, 1993). A *chi square* analysis also found the number of same-gender subjects significant at the $p < .001$ level, supporting the assumption that responses to the drawing task tend to be self-images.

Once again, a few respondents drew subjects of the opposite sex, expressing negative feelings about the subjects they portrayed. This study also found that males tended to express positive attitudes toward solitary subjects and negative attitudes toward relationships, to significant degrees. Females also expressed positive attitudes toward solitary subjects and both positive and negative attitudes toward relationships. Once again,

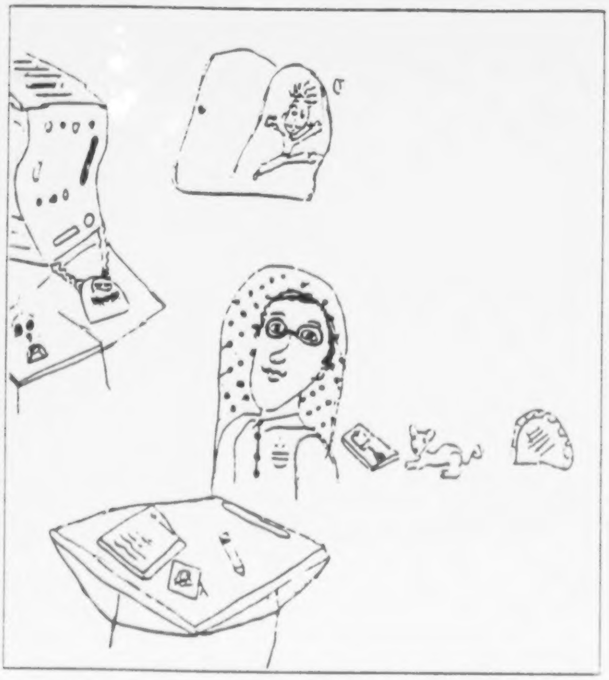

Figure 1 "The mad scientist!" by a girl age 10

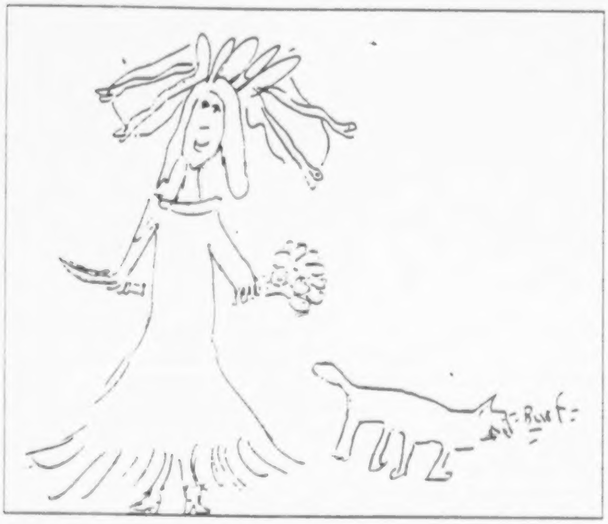

Figure 2 "The lady getting married to a dog who wants to kill him," by a boy age 8

males showed a higher frequency in drawings about assaultive relationships, and no gender differences were found in drawings about caring relationships.

Glick and Fiske (1996) investigated verbal expressions of male ambivalence toward females, noting protective paternalism, gender differentiation, and heterosexuality. They developed an inventory to tap hostile and benevolent sexism, asking whether respondents agreed or disagreed with various stereotypes about women, such as "women like to keep men on a tight leash." Their findings provided support for the theory that sexism tends to be ambivalent, often serving as a veiled wish to dominate.

## Purpose and Rationale

The purpose of the present study was to examine the portrayal of opposite-sex subjects by both females and males who responded to stimulus drawing tasks, and to consider the implications for diagnosis and therapy. It was theorized that the subjects chosen and the ways they are portrayed are extensions of how respondents think and feel about the individuals their subjects represent.

## Method

Responses to the drawing task by 222 males and 258 females were examined. Participants included children, adolescents, and adults. Those who portrayed opposite-sex subjects were identified, and their responses compared and analyzed. The children, ages 8 to 11, included students in grades two through five in five public schools and one private school in New Jersey and New York. The adolescents, ages 12 to 19, included students in grades 7 through 12 in 10 public elementary and high schools in Nebraska, New York, Pennsylvania, and Ohio. Also included were the younger students of a class of college freshmen in Nebraska. Adults, ages 20 to 50, included the older college students together with adult participants in Nebraska, New York, and Wisconsin. The older adults, age 65 and older, lived independently in their communities and attended recreational programs or social occasions in New York and Florida.

## Participants

Participants in the study included 116 of the original 480 respondents: the 46 males and 70 females who drew pictures about subjects of the opposite sex.

## The Test Instrument

The participants responded to the Drawing from Imagination subtest of the Silver Drawing Test of Cognition and Emotion (Silver, 1990; 1996). The subtest asks respondents to choose two from an array of 15 stimulus drawings, imagine something happening between the subjects chosen, then draw a picture about what they imagined. They are encouraged to change the stimulus drawings as they wish and to add their own ideas. Finally, they are asked to give their drawings titles or stories.

The stimulus drawings include human subjects (man, boy, woman, girl, and bride), animals (dog, cat, mouse, snake, and bug), and things (soda, knife, bed, tv, and refrigerator).

Two of the older adult groups responded to a second instrument, Stimulus Drawings and Techniques (Silver, 1991) which uses the same drawing task but presents a different set of stimulus drawings. As reported in the test manual, its relationship to the Silver Drawing Test was examined as part of a study of interscorer reliability. Twelve of the 24 drawings scored were responses to the stimulus drawings in one instrument; the other 12 were responses to the other instrument. No significant differences in mean scores were found; thus, there appeared to be consistency between the two instruments.

To assess representations of the opposite-sex, a rating scale was adapted from the Self-image and Emotional Content scales of the Silver Drawing Test (SDT, 1996) which range between strongly negative (1 point) and strongly positive (5 points). The scoring definitions were modified, as shown in Table 1. The score of 1 point is used to characterize strongly negative representations, such as murderous (1a) or victimized (1b) subjects of the opposite sex. The 2-point score is used to characterize frustrating (2a) or ridiculous (2b) subjects. The neutral 3-point score is used for unemotional (3a), ambivalent (3b), or ambiguous (3c) subjects; 4 points, for fortunate (4a) or friendly (4b) subjects; and 5 points, for generous (5a) or loving (5b) subjects.

## Procedures

The opposite-sex drawings were separated by age and gender, then scored and analyzed. After mean scores were analyzed using an analysis of variance, proportions of test performances were compared and individual differences were examined.

## Results

The analysis of variance found males significantly more negative the females (male mean of 2.35 versus female mean of 2.94 (F[1,112]=6.92, p <.01). There was also a borderline significant age difference. Responses by children and adolescents were more negative than responses by adults (F[1,112]=2.77, p <.10). There was ~~also~~ no interaction.

Several age and gender trends emerged. About one in four of the 480 respondents (24.2%) chose stimulus drawings of the opposite sex, with the percentages increasing with age from 29% of the children to 44% of the adolescents to 77% of the adults. The remaining respondents chose animal or same-sex subjects. More females than males drew opposite-sex subjects. (27.1% females, 20.7% males). Among adults, however, more men drew women and girls (41%) than women drew men and boys (36%).

As shown in Figure 3 and Table 2, both males and females expressed more negative than positive feelings toward the oppo-

Table 1
Scale for Assessing Portrayals of Opposite Sex Subjects

1 point. Strongly negative. Subject is portrayed as
  a. murderous or threatening
  b. victimized or helpless
2 points. Moderately negative. Subject is portrayed as
  a. frustrating or unsympathetic
  b. unfortunate or ridiculous
3 points. Neutral. Subject is portrayed as
  a. neither negative nor positive
  b. both negative and positive (ambivalent)
  c. meaning is unclear (ambiguous)
4 points. Moderately positive. Subject is portrayed as
  a. fortunate
  b. friendly or kindly
5 points. Strongly positive. Subject is portrayed as
  a. generous or effective
  b. loving or romantic

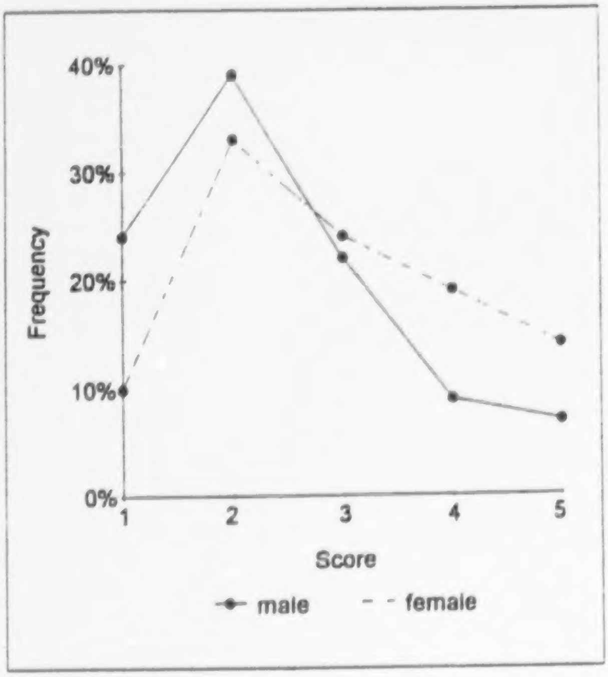

Figure 3 Portrayals of the opposite sex ranging from negative to positive

Table 2
Sex Differences in Portrayals of the Opposite Sex

| | **46 Males** | | **70 Females** | |
|---|---|---|---|---|
| *Score* | *N* | *Percentage* | *N* | *Percentage* |
| 1a. menacing | 5 | 10.9% | 5 | 7.1% |
| 1b. victim | 6 | 13.0% | 2 | 2.9% |
| | 11 | 23.9% | 7 | 10% |
| | | 63% | | 43% |
| 2a. powerful | 6 | 13.0% | 5 | 5.7% |
| 2b. ridiculous | 12 | 26.1% | 19 | 27.1% |
| | 18 | 39.1% | 23 | 32.8% |
| 3a. unemotional | 3 | 6.5% | 0 | 0 |
| 3b. ambivalent | 3 | 6.5% | 7 | 10.0% |
| 3c. unclear | 4 | 8.7% | 10 | 14.3% |
| | 10 | 21.7% | 17 | 24.3% |
| 4a. fortunate | 3 | 6.5% | 8 | 11.4% |
| 4b. friendly | 1 | 2.2% | 5 | 7.1% |
| | 4 | 8.7% | 13 | 18.5% |
| | | 15.2% | | 33.0% |
| 5a. effective | 0 | 0 | 2 | 2.9% |
| 5b. loving | 3 | 6.5% | 8 | 11.4% |
| | 3 | 6.5% | 10 | 14.3% |
| | | 46 | | 70 |

site sex. Males were more negative than females (63% males, 43% females); females were more positive than males (33% females, 15% males). Both genders peaked at the 2-point level, drawing moderately negative portrayals of opposite-sex subjects, most often ridiculous or unfortunate.

Examples of negative associations with the opposite sex are shown in Figures 4 through 7. "Panic in a church," (Figure 4) and "Do not marry a refrigerator," (Figure 5) are by males ridiculing brides. Figure 6, "Fairy tales can come true," and Figure 7 (untitled) are by females ridiculing bridegroom/mice.

An example of positive associations with the opposite sex is shown in Figure 8, "I came from the refrigerator then I went to bed." The fortunate subject appears to be a girl, and the title uses the pronoun "I." Nevertheless, the drawing was made by a 9-year-old boy who apparently identified with his subject.

## Discussion

Although this study found that males expressed significantly more negative feelings toward females than females expressed toward males, the finding is not necessarily evidence of male misogyny. It is also consistent with the finding of previous studies that males produced significantly more fantasies about assaultive relationships than females.

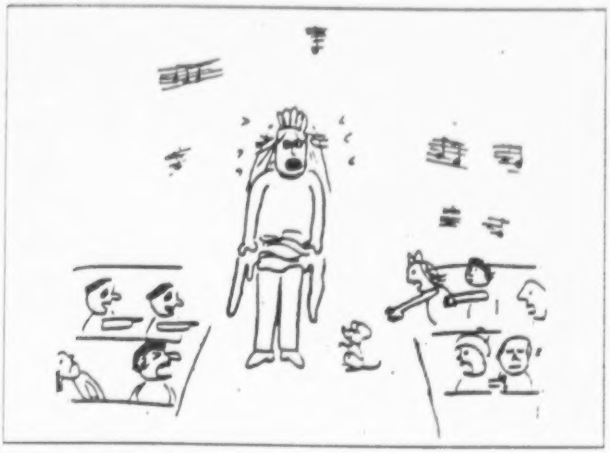

Figure 4 "Panic in a church," by a boy age 13

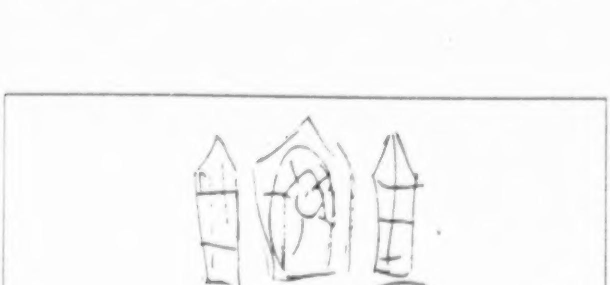

Figure 5 "Do not marry a refrigerator—it won't be any fun and it's probably not legal anyway," by a young man

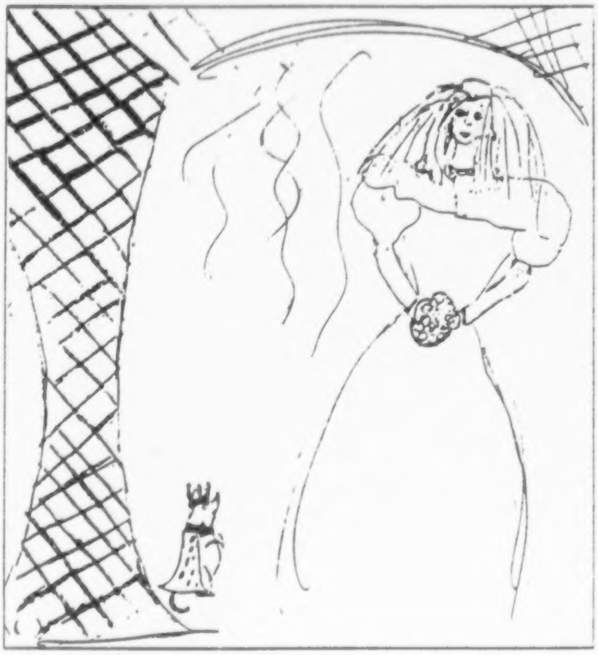

Figure 6 "Fairy tales can come true," by a young woman

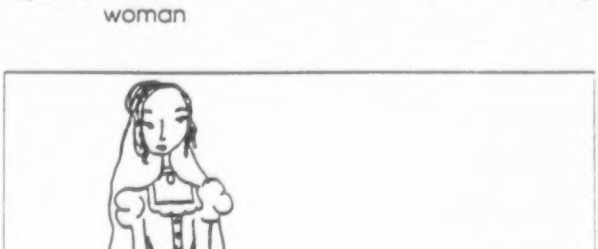

Figure 7 Untitled, by a girl age 11

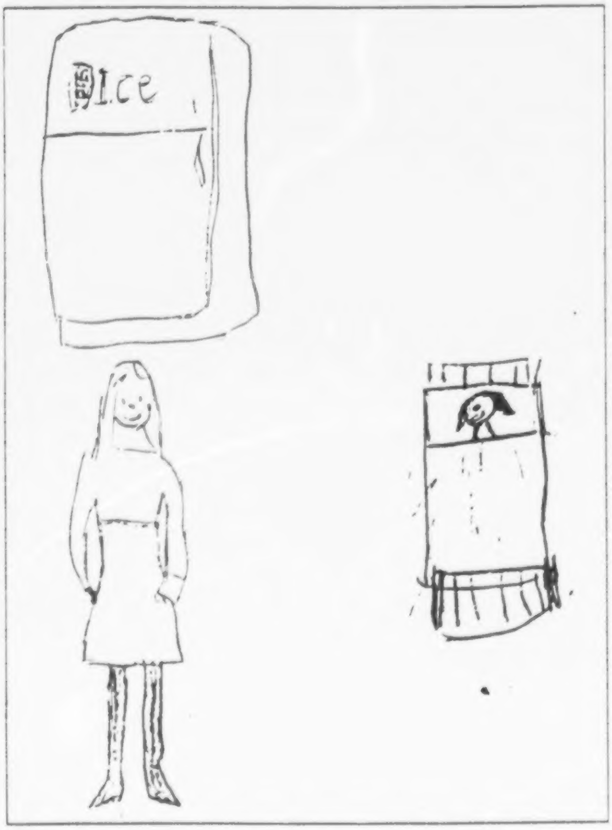

Figure 8 "I came from the refrigerator then I went to bed," by a boy age 9

If it is typical to project self-images, then heterosexual drawings about opposite-sex subjects are likely to be images of the other, "not me," or "not one of us." If it is typical to express positive feelings about self-images, as found in the previous studies, then the reverse could be expected in drawings about others, particularly in drawings by males.

It was surprising to find feelings of disgust and contempt toward subjects of the opposite sex so prevalent among both genders. A possible explanation may be the observation by Miller (1997) that disgust serves to protect selfhood against a variety of intruders and the challenge of different opinions and value systems. As Miller points out, disgust also marks the boundaries of one's culture and sense of identity. It follows that feelings of disgust and superiority could be expected in drawings about others, just as drawings about self tended to elicit positive associations. Our antipathies define us as surely as our sympathies.

It is important to note that only 21% of the males and 27% of the females chose opposite-sex subjects. It may be that unhappy experiences with members of the opposite sex were triggered by the stimulus drawings they chose and associated with their fantasies. The findings of this study suggest that opposite-sex fantasies expressed in response to the drawing task could provide access to conflicts or troubling relationships, and thereby, opportunities for clinical discussion and intervention.

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# Summaries

Studies of Unimpaired Children and Adults, Age and Gender Differences, Self-Images, and Correlations Between Tests

## 1. Age and Gender Differences in Fantasies About Solitary Subjects and Relationships

*Draw a Story: Screening for Depression and Age or Gender Differences,* 81-87, 1993b

This study separated into two groups the responses of 360 children and adults to the *Draw a Story (DAS)* Form A stimulus drawing task. The two groups: drawings about solitary subjects, and drawings about relationships, were again divided into age and gender groups, then scored on a scale ranging from strongly negative (1 point) to strongly positive story content (5 points).

The study's subjects included 203 females and 157 males in five age groups: children ages 9 to 12, adolescents ages 13 -16 and 17-19, and adults, ages 21-64 and 65 or older. Approximately 50% were unimpaired. The remaining 50% had been diagnosed as clinically depressed, emotionally disturbed, or learning disabled.

In portraying solitary subjects, the story content of both male and female groups was more negative than positive. The male groups were more negative than the female groups. In portraying relationships, males again were more negative. The group of boys was the most negative of all groups. The group of senior women was the most positive.

## 2. Assessing the Emotional Content of Drawings by Older Adults: Research Findings and Implications

*Am Journal of Art Therapy*, 32, No.2, 46-52, 1993c

This study examined responses by 59 adults, ages 65 or older, to the drawing from Imagination tasks of the *Silver Drawing Test* and *Stimulus Drawings & Techniques*. The 28 men and 31 women had participated in the study reported in Reprint 18, "Age and Gender Differences Expressed Through Drawings."

The sample of older adults expressed more negative attitudes toward the solitary subjects and relationships they depicted than any other age group. The men were more negative than the women. On the other hand, they used humor more often than any other age group. The humor they expressed (unlike the aggressive humor typical of adolescent drawings) tended to be self-deprecating, and appeared more often in responses by older men than older women. These findings suggested that the emotional strengths of older adults may tend to be underestimated. They also suggested a need to look for variability within larger samples of age and gender groups, as well as mean trends between groups.

### 3. Gender Differences in the Spatial Abilities of Adolescents

*ARTherapy, Journal of the Am. Art Therapy Assn*, 13 (2), pp 118-120, 1996

It is generally accepted that males are superior to females in spatial ability. To test this assumption, the Predictive Drawing and Drawing from Observation subtests of the *Silver Drawing Test* were administered to 33 girls and 33 boys, ages 12 to 15, attending public schools in Nebraska, Pennsylvania, and New York. Their mean scores were analyzed using a computation of T-test scores.

No significant differences in spatial ability were found. Although the mean scores of the girls tended to be stronger in ability to represent depth, the probability was not significant. The findings suggested that non-verbal expression through drawings offers unique opportunities to contribute to the growing body of knowledge about gender differences and similarities.

### 4. Gender Parity and Disparity in Spatial Skills: Comparing horizontal, vertical, and other test performances by adolescents and adults

*ARTherapy, Journal of the Am. Art Therapy Assn*, 15 (1), 38-46,1998

This study examined reports of female failure in performing spatial tasks, as well as reports of no gender differences. The tasks, originally designed by Piaget and Inhelder to assess concepts of horizontality and verticality, assess the ability to imagine and predict the appearance of water in a tilted container, and the appearance of a house on a steep hill.

The study also reexamined response drawings by 88 males and 88 females. Previously, their responses had been scored on a 5-point scale ranging from low to high levels of ability. When reexamined, the responses were scored in terms of success or failure, the approach used in the reports of female failure.

No significant gender differences were found. Both males and females received lower scores in verticality than horizontality, more males than females. The findings suggested that the reports of male superiority may have tested knowledge of physics rather than Piagetian concepts of space. The effects of low expectations and restricted vs open-ended drawing tasks were also discussed.

The study also examined individual responses to the drawing tasks. An art director/designer and a gifted 9-year old received the highest scores whereas two psychologists seemed unable to imagine how a house could be built on a steep slope.

## 5. Correlations between *The Silver Drawing Test* and *Draw a Story*

*Updating the Silver Drawing Test and Draw a Story Manuals*, 1998

This study examined relationships between the *SDT* and *DAS* measures which use different stimulus drawings but virtually the same task and rating scale to assess emotional content. It was theorized that if no significant difference between measures were found, the *SDT* might be also used to screen for depression, and the *DAS* might be used to assess cognitive skills.

To determine whether the *SDT* and *DAS* measure the same constructs, both tasks were presented without a time interval to samples of chidren and senior adults. The children included 7 boys and 12 girls, ages 7 to 8, in a public elementary school in California. The adults included 7 men and 12 women in a retirement residence in Florida. Their ages ranged between "65 plus" and 85, with a mean age of 80.89 years.

Responses were scored for both emotional and cognitive content. In emotional content, scores on both the *SDT* and *DAS* were correlated significantly (r=0.57, p <.0001). The only difference found was between age groups: more than 25% of the children drew moderately positive fantasies scored 4 points compared with 17% of the adults. Cognitive content was also consistent across test scores (r=.66. p <.0001).

These findings lend evidence to the validity of emotional and cognitive content scores across test formats. The size of the correlations between *SDT* and *DAS* scores seems to indicate that the two measures assess the same constructs, suggesting that the *SDT*, like *DAS*, could be used to screen for depression, and that *DAS*, like the *SDT*, could be used to assess ability to select, combine, and represent.

It may be that differences between the sets of stimulus drawings may be irrelevant, that both trigger associations with past experiences, and provide access to fantasies, cognitive skills, and attitudes towrd self and others.

## 6. Age and Sex differences in Fantasies about Food and Eating

*Updating the Silver Drawing test and Draw a Story Manuals*, 1998

This study asked if there were age or gender differences in fantasies about food or eating in response to the *SDT Drawing from imagination* subtest which includes drawings of a soda and a refrigerator among its 15 stimulus drawings. The study's subjects included 293 children, adolescents, and adults in four age groups.

Proportionally, more females than males drew fantasies about eating in each age group. Among females, the largest proportion was found among older adolescents, ages16 to 18 (46.9%). The next largest (34.4%) was found among girls age 9 to 10 and 13 to 15. Among males, the largest proportion was found among boys 13-15 (29.4%), the smallest among men (10%).

The findings suggested that responses to this subtest may be useful in identifying eating disorders that have been masked, and that further investigation would be worthwhile.

## Publications by Rawley Silver

1. 1962 Potentialities in art education for the deaf.
*Eastern Arts Quarterly*, 1 (2) 30-38

Reprint # 1, pages 3 -10.
Also reprinted in I.S.Fusfeld (Ed.), *Handbook of Readings in Education of the Deaf*, Springfield IL: Chas C. Thomas, 1967

2. 1963 Art for the deaf child - its potentialities.
*The Volta Review*, 65 (8) 408-413

Reprint #2, pages 11-17.

3. 1963 Art as a means of communication with deaf and aphasic children
*Pathways in Child Guidance*, New York City Board of Education

Discusses objectives and methods.

4. 1966 *The role of art in the conceptual thinking, adjustment, and aptitudes of deaf and aphasic children*.
Unpublished doctoral dissertation, NY: Columbia University,
University Microfilms (No. 66-8230)

Summarized on page 61.

5. 1967 *A demonstration project in art education for deaf and hard of hearing children and adults*.
Supported by a grant from the U.S.Office of Education, Bureau of Research, Project #6-8598, ERIC ED No. 013 009

Summarized on page 61.

6. 1968 Art education and the education of deaf students, Co-author, John Harrington
*The Volta Review*, 70 (60) 475-480

Reprint # 3, pages 19-24. Also reprinted in *Curriculum, Cognition, and Content*, Washington, D.C., A.G. Bell Assn, 1968.

7. 1970a Art and the deaf
*Bulletin of Art Therapy* (*Am. Journal of Art Therapy*) 9 (2) 63-67.

Discusses the studies reported in Reprints #4 and # 5

8. 1970b Art breaks the silence
*Children's House*, 4 (4) 10-13

This journal reprinted # 7 (Art and the Deaf) making editorial changes

9. 1971 The role of art in the cognition, adjustment, transfer, and aptitudes of deaf children
*Proceedings of the Conference on Art for the Deaf*, pp. 15-26.
(Ed) Claire Deussen, Junior Arts Center of the City of Los Angeles.

Summarized on pages 59-60.

10. 1972 *The transfer of cognition and attitudes of deaf and aphasic children through art.*
Springfield IL: State of Illinois Instructional Materials Center No. 62706.

Reprint # 10, pages 67-76.

11. 1973 *Cognitive skills development through art experiences: An educational program for Language ad Hearing Impaired and Aphasic Children*
NY State Urban Education Project No. 147 232 101,
ERIC ED No. 084 745

Reprint # 5 is an overview of this 102-page report

12. 1975a Using art to evaluate and develop cognitive skills: Children with communication disorders and children with learning disabilities
Paper presented at the 1975 AATA Conference
ERIC ED No. 116 401

Reprint No.6, pages 37-46.

13. 1975b Children with communication disorders: cognitive and artistic development
*American Journal of Art Therapy*, 14 (2) 39-47

Summarizes State Urban Education Project (see # 5).

14. 1975c Clues to cognitive functioning in the drawings of stroke patients
*American Journal of Art Therapy*, 15 (1) 3-8

Presents *SDT* responses by 8 patients (summarized in Reprint #12).

15. 1976a *Shout in Silence: Visual arts and the deaf*
Exhibitiôn circulated in the Smithsonian Institution, 1969-1976
Catalogue published by the Metropolitan Museum of Art

Summarized on page 62.

16. 1976b *Using art to evaluate and develop cognitive skills: Children with communication disorders and children with learning disabilities*
ERIC ED #116 401, 1975
Also reprinted with permission in *American Journal of Art Therapy*, 16 (1)
Pages 11-19)

Reprint # 6, pages 37-46.

17. 1976c Objectives and methods of teaching art to deaf students
*Viewpoints: Dialogues in Art Education*, 3 (1) 26-28

Reprint #7, pages 47-48.

18. 1976d Using art to measure creative thinking.
In R. Shoemaker (Ed.) *Creativity and the Art Therapist's Identity*, *64-66*
*Proceedings of the 1976 AATA Conference*

Amplifies the experiences of "Charlie" and low expectations discussed in the 1996 edition of *Silver Drawing Test*, pages 1-4.

19. 1977a The question of Imagination, originality, and abstract thinking by deaf children.
*American Annals of the Deaf*, 122 (3) 349-354

Reprint # 8, pages 37-54.

20. 1977b* The role of art in developing and evaluating cognitive skills
Co-author Claire Lavin, PhD
*Journal of Learning Disabilities*, 10 (7) 416-424
ERIC ED No. EJ 171 839

Reprint # 10, pages 67-75.

21. 1978 *Developing cognitive and creative skills through art: Programs for children with communication disorders*
Baltimore, University Park Press (259 pages)

First edition of a book summarized on page 63.

22. 1979a* Teaching handicapped children
*Arts & Activities*, 85 (3) 41

Reprint #11, page 77.

23. 1979b* *Art as language for the handicapped*
exhibition circulated by the Smithsonian Institution, 1979-1982.
ERIC ED No. 185 774 (37 pages), see also Videotape

Reprint # 12 (abridged/revised catalogue)

24. 1979c Developing coghitive skills in handicapped children through art.
Co-author, Claire Lavin, PhD.
Paper presented by Lavin at Piagetian Conference.
ERIC ED No. 176 426 (14 pages)

Lavin included 8 pages of publication #21 without crediting its source.

25. 1979d Working with handicapped art students.
National Art Education Association 1979 Conference Presentation
ERIC ED No. 181 650 (11 pages)

In working with students who have language disabilities, we can emphasize demonstration, communication, flexibility, and content rather then form. It is realistic to expect these students to have at least as much interest and ability in art as students who do not have disabilities..

26. 1980 *Assessing and developing cognitive skills in handicapped children through art*
Co-authors E. Boeve, K. Hayes, J. Itzler, C. Lavin, J O'Brien, N.Terner,
& P. Wohlberg
National Institute of Education Project No. G 79 008 (46 pages)
ERIC Ed No. 209 878

Summarized in Reprint #13, pages 93-96.

27. 1981a *Stimulus Drawings & Guidelines for Using Them*
NY: Trillium Books (First edition 10 pages).

1997 edition summarized on page 113.

28. 1981b Review of *Learning and Visual Communication*, David Sless, NY, John Wiley
& Sons, 1981, *American Journal of Art Therapy*, 21 (1) 36.

Sless demonstrated that visual thinking is an intellectual process, not a sensory process separate from thought. In embryo development, eyes develop before the brain whose neural tissue can then make use of visual information. The importance of visual thinking is evident in scientific discoveries but is obscured by emphasis on reading and math.

29. 1982a Developing congitive skills through art
In Lillian G. Katz (Ed.) *Curent topics in early childhood education*, Vol 4.
ERIC Clearinghouse on Elementary and Early Childhood Education, NJ
Ablex Publishing Co, N.J., pages 143-171,
Previously published by ERIC, ED No. 207 674 ( 41 pages)

Although this chapter discusses studies that have been reprinted here, it includes additional comparisons between normal and disabled students.

30. 1982b *Stimulus Drawings & Techniques*
Revised NY, Trillium Books (9 pages).

1997 edition summarized on page 113.

31. 1983a *Silver Drawing Test of Cognitive and Creative Skills*
Seattle: Special Child Publications. ISBN 0-87562-079-5 (96 pages)

1996 edition summarized on page 113.

32. 1983b Identifying gifted handicapped children through their drawings
*ARTherapy: Journal of the American Art Therapy Association* 1 (1)
40-46. ERIC EJ No. 295 217

Reprint #14, pages 97-103.
Also reprinted in *Wellsprings*, 1986 1 (3) 7-14

33. 1984a Art as language for children with learning disabilities
*Their World*. NY: The Foundation for Children with Learning Disabilities, 5-59

Much of this article has been included in Reprints #12 (p.79) and #14 (p. 97).

34. 1984b The stimulus drawing technique with adult psychiatric patients, stroke patients, and in adolescent art therapy, Co-authors Louise Sandburg and Kristen Vilstrup.

*ARTherapy, Journal of the American Art Therapy Association,* 1 (3) 132-140

Reprint # 15, pages 105-112.

35. 1986a* Review of *The Lowenfeld Lectures* by J.A.Michael, The Pennsylvania State University Press, 1982.
*ARTherapy: Journal of the American Art Therapy Association*, 3 (2) 91.

Summarized on page 64.

36. 1986b *Developing Cognitive and Creative Skills Through Art.*
Reprinted. NY: Ablin Press.

1989 edition summarized on page 63.

37. 1986c *Stimulus Drawings & Techniques*
Revised. NY: Trillium Books (14 pages).

1997 edition summarized on page 113.

38. 1987a A cognitive approach to art therapy
in Judith Rubin (Ed.) *Approaches to Art Therapy*, 233-250. NY: Brunner Mazel

An overview of the *SDT*: backgound literature, the role of language in cognition, left and right hemisphoere thinking, the role of art in assessing and developoing cognitive skills, the SDT assessment, and a case study in Reprint #4 (Joey).

39. 1987b Sex differences in the emotional content of drawings
*ARTherapy: Journal of the American Art Therapy Association*, 4 (2) 67-77.

Reprint # 16, pages 117-128.

40. 1988a Screening children and adolescents for depression through *Draw a Story*,
*American Journal of Art Therapy*, 26 (4) 119-124.

This article examines the question whether strongly negative responses to the *Draw a Story* task are linked to clinical depression, and whether negative responses persist over time.

41. 1988b *Draw a Story, Screening for depression and emotional needs*
First edition, NY: Ablin Press, ISBN: 0-9621429-0-5, 80 pages.

The 1993 edition is summarized on page 113.

42. 1989a *Developing cognitive and creative skills through art.*
Third edition, revised. NY: Ablin Press. ISBN 0-9621429-2-1.
ERIC ED # 410 479, CB 027 909

Summarized on page 63.

43. 1989b *Stimulus drawings & techniques in therapy, development, and assessment.*
Reprinted. NY: Ablin Press. ISBN 0-9621429-3-x ( 95 pages).

Summarized on page 113.

44. 1990 *Silver Drawing Test of Cognitive Skills and Adjustment.,*
*Drawing What you Predict, What you See, and What you Know*
Second edition, revised. NY: Ablin Press. ISBN: 0-9621429-1-3 (92 pages).

The 1996 edition is summarized on page 113.

45. 1991a *Stimulus drawings & techniques in therapy development and assessment.*
Reprinted. FL: Ablin Press Distributors. ISBN 0-9621429-3-x, 95 pages.

The 1997 edition is summarized on page 113.

46. 1991b Using the *Silver Drawing Test* in school and Hospital. Coauthor, F. Carrion.
*American Journal of Art Therapy*, 30 (2) 36-43.

Summarized on page 114.

47. 1992 Gender differences in drawings: A study of self-images, autonomous subjects, and relationships
*ARTherapy, Journal of the American Art Therapy Assn*, 9 (2) 85-92.

Reprint # 17.

*48. 1993a* *Draw a Story: Screening for depession and age or gender differences.* Revised.
Second edition, revised. FL: Ablin Press Distributors. ISBN 0-9621429-4-8.
ERIC ED # 401 495

Summarized on page 113. In addition, one of its studies is summarized on page 177 (Age and gender differences in fantasies about solitary subjects and relationships).

49. 1993b Age and gender differences expressed through drawings: A study of attitudes toward self and others
*ARTherapy: Journal of the Am. Art Therapy Assn*, 10 (3) 159-168.
ERIC EJ # 502 654

Reprint #18, page 137.

50. 1993c Assessing the emotional content of drawings by older adults
*American Journal of Art Therapy (32 (2) 46-52.*

Summarized on page 177.

51. 1993d *Shout in Silence: Visual arts and the deaf.* Abridged.
FL: Ablin Press Distributors ISBN 0- 9621429-5-6.

Summarized on page 62.

52. 1994a Gallery *ARTherapy, Journal of the American Art Therapy Assn* 11 (2) 102-103

Sketches of artists and art therapists.

53. 1994b* Expanding the Role of Art Therapy
*ARTherapy, Journal of the Am Art Therapy Assn*, 1 (4) 255-256

Speculates on how art therapy may change during the next 25 years.

54. 1995* Identifying and assessing self-images in drawings by delinquent adolescents.
Co-author, JoAnne Ellison.
*The Arts in Psychotherapy*, 22 (4) 339-352. ERIC EJ 545 763.

Reprint # 19, page 147.

55. 1996a *The Silver Drawing Test of Cognition and Emotion.*
Third edition, revised. FL: Ablin Press Distributors. ISBN 0-9621429-6-4.
ERIC ED 398 462, CG 026 831.

Summarized on page 113.

56. 1996b *Gender differences in the spatial abilities of adolescents*
*ARTherapy, Journal of the Am art Therapy Assn*, 13 (2) 118-120.
ERIC EJ 530 390.

Summarized on page 177.

57. 1996c Sex differences in the solitary and assaultive fantasies of delinquent and
nondelinquent adolescents
*Adolescence*, 31 (123) 543- 552. ERIC EJ 535 383.

Reprint # 20, page 161.

58. 1996d *SDT Teste do Desenho de Silver: Cognicao e Emotao.* Translated by
Cristina Dias Allessandrini, Jose Luciano Miranda Duarte, Margarida Azevedo
Dupas, and Marisa Pires Fernades Bianco.
SP, Brasil: Casa do Psicologo

59. 1997 Sex and age differences in attitudes toward the opposite sex.
*ARTherapy, Journal of the American Art Therapy Assn*, 14 (4) 268-272.

Reprint # 21, page 171.

60. 1997b *Stimulus Drawings and Techniques in Therapy, Development & Assessment*
Reprinted. FL: Ablin Press Distributors. ISBN 09621429-3-x (95 pages).

Summarized on page 113.

61. 1998a *Updating the Silver Drawing Test and Draw a Story Manuals,*
FL: Ablin Press Distributors. ISBN 0-9621429-7-2.

Includes two studies summarized here: "Correlations between The *SDT* and
*DAS*," page 178; and "Age and sex differences in fantasies about food and
eating," page 179.

62. 1998b Gender parity and disparity in spatial skills: Comparing horizontal, vertical, and
other task performances, *ARTherapy*, 15 (1) 38-46.

Summarized on page 178.

The American Art Therapy Association gave Rawley Silver its Honorary Life Membership Award in 1983, and Research Awards in 1976, 1980, 1992, and 1996. She is Board-Certified as a registered art therapist, and a painter listed in *Who's Who in American Art*.

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